# AMERICAN AGRICULTURIST

FOR THE

FARM · GARDEN · & · HOUSEHOLD

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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AUTUMN.
WITH WHAT A GLORY COMES AND GOES THE YEAR!
THE BUDS OF SPRING, THOSE BEAUTIFUL HARBINGERS
OF SUNNY SKIES AND CLOUDLESS TIMES, ENJOY
DEW'S NEWNESS, AND EARTH'S FRESH VERDITURE SPREAD OUT;
AND WHEN THE SILVERY HABIT OF THE CLOUDS
COMES DOWN UPON THE AUTUMN SUN,
AND WITH
A SOBER GLADNESS THE OLD YEAR BIDS UP
HIS BRIGHT INHERITANCE OF GOLDEN FRUITS,
A TIMID AND PREGNANT PAUSE THE SPLENDID
SCENE
AMER. AGRI.

"AUTUMN, IN HIS LEAFLESS BOWERS, IS WAITING FOR THE WINTER'S SNOW."

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## October.

Yet shall the blue-eyed gentian look
Through fringed lids to heaven,
And the pale aster in the brook
Shall see its image given;

The woods shall wear their robes of praise,
The south-wind softly sigh,
And sweet, calm days in golden haze
Melt down the amber sky.

JOHN G. WHITTIER.

# FARM AND GARDEN WORK
# OCTOBER, 1888.

### Live Stock Notes.

*Horses* demand good care, good feed and good shelter, after the exhausting work of the hot months. They should not be allowed to lie out in the pasture during cold, dewy or frosty nights, or through chilling rain-storms. If they are caught out in a rain-storm on the road, rub them dry as soon as they are in the stable. Never let horses stand over night with mud dried on their heels. Such neglect is the prolific source of scratches and other evils.... Oats should be kept at least four months after harvesting before they are fed out. A bran mash once or twice a week is good for horses on dry feed.

*Cows* should be kept in a full flow of milk this month by liberal feeding and good care. Most of them are with calf, and thus there is a double demand upon their systems. After the frosts have come the pasturage should be supplemented by liberal rations of bran, ground oats, or other feed. Cows should not be exposed to autumn rains and dews. Lying out in the pasture or open barnyard through the chilly nights will entail a loss in diminished milk-yield of far greater amount than the cost of keeping them under shelter at night and during cold storms. A good stable is much more cleanly to milk in than an open yard. The man who will milk in a rain-storm, with the dirty water dripping from the cow's side into the pail, the cow, meanwhile, being uncomfortable and nervous, is the kind of man who doesn't believe dairy-farming pays.

*Young Cattle* must be kept in good growing condition. A check in growth and thrift during the first year can never be recovered by subsequent treatment. Bran, ground oats, oil-cake and roots are all suitable food constituents, but corn and corn meal, if fed at all, should be given very sparingly and in connection with large proportions of muscle-forming food.

*Vermin* should not be tolerated on calves or other stock. It is the scrawny half-fed young stock upon which vermin batten. Clean them off, and thoroughly whitewash the stalls and pens with lime-wash to which add a little carbolic acid.

*Hogs* should be well started now towards fattening. Even if they run in a pasture or orchard, it is well to give them a feed morning and night of bran and corn-meal in equal proportions, or of soft nubbins from the corn field. When the time comes to shut them up for "finishing off" a variety of food keeps them from cloying. Steamed or cooked pumpkins or squashes from which the seeds have been removed, the small potatoes which are picked out from the general crop, the trimmings of the vegetable garden, and other vegetables are wholesome, and make a welcome change from an unvarying corn diet. Keep the pens clean, and do not let the pigs wallow in a narrow restricted yard, deep in unutterable filth. Do not let brood sows get fat.

*Sheep and Lambs* will run out and take care of themselves later than any other stock. Now is the time to cull out the flock, and fatten for the butcher those sheep which failed at shearing time to yield a profitable fleece. Lambs that are intended to turn off should be given generous feed. There is more money in rearing lambs, this year, than in any other class of butcher's stock.

*Poultry.*—Early pullets of good breeds begin to lay this month, and if given warm, well-ventilated and well-lighted shelter, will lay right through the winter. Fatten up all the surplus poultry and sell it as soon as it is ready for market. There is nearly always a glut of poultry in the markets about Thanksgiving time. Keep the poultry houses clean and well whitewashed and provide plenty of dust boxes to keep the fowls clear of vermin.

### Orchard and Fruit Garden.

*Planting Fruit Trees.*—In most of our Northern States, this month is the most favorable season for planting hardy trees of all kinds. In former years the opinion prevailed that trees should never be taken up before several hard frosts had occurred, but from year to year tree planters have become more impatient. In consequence nurserymen have taken the hint and are now preparing trees for early transplanting by stripping their foliage. While this method is not to be recommended except in some rare cases, the plan of deferring planting so late that the trees cannot become established in the soil before winter is not any more commendable. Stone fruits, such as peaches, cherries and plums, do better when transplanted in spring, but for apples, pears, quinces, etc., if the ground is in proper condition, fall planting is preferable. Whatever season has been determined upon for planting, experienced orchadists find it to their advantage to order their trees in the fall and heel them in until wanted, so as not to suffer delay when work is most pressing.

*Heeling-in* consists in burying the roots in a place where they will keep in good condition until ready for planting. The usual method is to open a trench, lay the trees in a slanting position and fill with earth. The soil has to be worked carefully among the roots so as to leave no open spaces around any part of them. It is well to raise the soil over the roots so as to turn off water. Properly heeled-in, trees will be found in better condition for planting next spring than those taken directly from the nursery row.

*Strawberries.*—Pot-grown plants set out now will produce a fair crop next year, and even good ground-layers planted now may give a few pickings. The hill-system of planting is to be recommended only when very large berries for exhibition purposes are desired; for the production of plenty of good average sized berries for market as well as for home use, planting in rows four to five feet apart, the plants in the rows twelve to eighteen inches apart, and allowing the runners to form a matted bed, gives better satisfaction.

*Raspberries and Blackberries* start so early in spring that whenever the ground can be brought in proper condition, it is better to plant them in autumn. Cut off all the wood to within six inches from the roots. Raspberries should be planted four feet apart each way, or two feet apart in rows not nearer to each other than five feet; blackberries six feet each way, or two feet apart and rows six to eight feet apart.

*Currants and Gooseberries* may be planted now or in spring.

*Grapes.*—The lists of really good varieties of grapes are now so large that experienced planters find it difficult to make a choice. The following list comprises the varieties which have probably given better satisfaction over the largest areas than any others: Black; Concord, Worden; red; Brighton, Delaware; white; Niagara, Gœthe.

### Kitchen and Market Garden.

*Storing Roots.*—When large quantities of roots are to be stored and there is no root cellar for this purpose, it is far better to construct pits than to fill the cellar of one's dwelling house with a general assortment of roots and vegetables to vitiate the air of the entire house. If it is properly constructed, roots will keep better in a pit than in an ordinary cellar. The pits are dug three or four feet deep, six feet wide, and as long as needed. The roots are stacked in these, beginning at the end of the pit, and following two feet of its length; a space of six inches is left, and another section of two feet is built up, and so on, in each case piling the roots up to the ground level; the spaces are then filled in with earth, and the pit will present a series of sections of two feet of roots and six inches of earth. The roots are covered lightly at first, but when cold weather comes, put on about two feet of soil, rounded and smoothened to carry off water.

*Celery* for early use has to be banked up now, but the main crop for wintering should be hilled but lightly at this season. Too early banking up is a frequent cause of celery not keeping through winter. Care must be taken not to allow soil to get between the stalks.

*Asparagus.*—The stalks from old beds should be burned, and a good dressing of manure spread over the ground. Young plants may be set out now as well as at any season, when the ground is in good condition. In heavy, wet soil it is best to plant in spring. Any good, rich garden soil is suitable for asparagus; newly set plants should be lightly covered during winter.

*Rhubarb* may be planted now. To have good stalks the plants have to be renewed every three or four years, by taking up the old clumps, dividing them into pieces with two or three eyes, and replanting in plentifully manured ground. To obtain the best results the plants should not be nearer than three feet each way.

### Flower Garden and Lawn.

*Protection from Frost.*—In the latitude of New York and northward killing frosts usually occur in the second week of this month. After this we have two or three weeks of delightful weather free from frost. With but little trouble, flower-beds can be protected so as to extend their beauty for several weeks. When frosty nights threaten, make a frame of light poles over the bed and cover with matting, sheets, or a few layers of newspapers. The frame must be high enough that the covering does not rest directly upon the plants, else it would offer but little protection.

*Spring Flowering Bulbs*, such as hyacinths, tulips, crocus, narcissus, etc., should be planted as early as feasible. They require a deep, mellow, rich soil, free from standing water. Good sized hyacinths should be planted four to five inches below the surface; tulips and narcissus three to four inches; crocus and other small bulbs, two to three inches.

*Tender Bulbs* like tuberoses, tyrichas, colocasias, etc., must be taken up before frost has killed their stalks down to the ground. They have to be thoroughly dried before storing them away, and have to be kept during winter in a dry place where the temperature does not fall below 40°.

*Gladiolus* are almost hardy and will not suffer from light frosts, if they were planted a proper depth, that is from four to five inches deep. Dig the bulbs with the stalks attached, tie in bundles of about a dozen, hang them up in a dry place secure from frost, and when the stalks have become entirely dry cut them off, twist off the old corns and shriveled roots, put the bulbs in bags or boxes and store in a dry frost-proof place.

*Leaves* should be raked from the lawn, not only as a matter of neatness but also to preserve the leaves for covering tender plants during winter.

### Greenhouse and Window Plants.

*Avoiding Risks.*—Although it is well to keep house-plants out doors as long as this may be done without injury, it is not prudent to run too great a risk by exposing them to the dangers of actual frost; and frost is far more injurious to plants after they have been potted than while they are growing in the open ground. Therefore everything in the greenhouse and window garden should be ready for the reception of the plants.

*Bulbs for Forcing.*—The earlier hyacinths, tulips, and other so-called Dutch bulbs are potted, the better will be their flowers. Bulbs planted early this month may be forced to bloom about Christmas. They require a rich soil mixed with about one-third of clear sand. After the bulbs have been potted, put them away in a cool dark cellar for three or four weeks, or until their roots have spread well around the inner side of the pots. Then remove the pots to a sunny window in a moderately warm room and keep the soil moist. By planting at different times a continuous bloom may be kept up all winter.

## FALL AND WINTER FEEDING OF YOUNG STOCK.

PROF. W. A. HENRY, DIRECTOR WISCONSIN EXPERIMENT STATION.

Boys, colts and calves need the most attention at a period when their personal attractions are the least. As calves pass out of their babyhood and assume a languid indifference to all about them but flies and grass, they are apt to be neglected; if they are, the loss is irreparable. A calf that has not made a good start by fall had better be disposed of at any price, while having made a good start, it must be kept constantly gaining, at any cost within reasonable limits. The important point in stock feeding is to constantly bear in mind that a *young animal gives better returns for feed consumed than an old one.* A pound of meat or a pound of hay adds more to the weight of a calf than to the same animal when grown. A grown animal in thin flesh but vigorous, will swell out and fill up the tissues with water and seem to gain very heavily for a time when put on good feed and may give better returns for a given amount of feed than a young animal in good flesh, but under ordinary conditions, for both young and old, the proposition I state is true.

At this station we fed sixteen calves from good, common dairy stock until they were two years old, keeping account of all the food consumed. At first, when feeding skim-milk, oats, corn meal, etc., we could get an average gain of about two pounds per day at a cost of only three dollars and fourteen cents per one hundred pounds, allowing twenty-five cents per one hundred pounds for sweet skim-milk, twenty dollars a ton for oats, sixteen dollars for corn meal, twelve dollars for bran and eight dollars for hay; but that was the cheapest gain we ever got with these animals as our figures will show. Here are the periods of the trial and cost of growth:

| No. | Length of Period. | Season. | Cost of 100 pounds of gain. |
|---|---|---|---|
| 1. | 98 days, | Summer, | $3.14. |
| 2. | 84 " | Fall, | 3.38. |
| 3. | 84 " | Winter, | 5.47. |
| 4. | 42 " | Early spring, | 8.36. |
| 5. | 2.12 " | Summer and fall, | 3.59. |
| 6. | 65 " | Winter, | 6.18. |
| 7. | 88 " | Late winter, | 16.01. |
| 8. | 57 " | Spring and summer, | 8.19. |

During periods five and six the steers were on pasture. I should say that during the first summer, when they were yearlings, we charged each animal eight dollars for pasture, and the second summer up to June, when the experiment closed, we charged at the rate of ten dollars each for pasture. We found that heavy feeding was successful at all times except late in winter and early in spring, when small gains were made and the expense run high, this being very marked late in the second winter, when gain was made at the excessive cost of about sixteen dollars per one hundred pounds. This excessive cost might have been avoided perhaps by more rational feeding. It shows, I think, that we fed too heavily early in the winter. Moderate feeding and steady growth pay best.

I think these figures show plainly the point I am trying to make, that feed goes further with young animals than old ones. This being true, we should endeavor to push our farm stock rapidly to maturity, always bearing in mind that summer growth is cheapest, and sell just as early as possible.

For making thrifty calves, in my experience, oats come next to milk, either ground or whole, but preferably ground for young calves, since they will learn to like them quicker and masticate them better. To get a calf while yet on skim-milk to eat oats, it should be tied up; and as soon as fed milk, a handful of oatmeal, or whole oats even, put in its mouth; at first, it will dislike the treatment, but soon it will get the taste and readily dispose of a half-pint, placed in a little feed box conveniently located in front. Hay and grass follow naturally, and later, bran can be used. During pleasant fall weather the pasture will afford exercise and feed, but if flies are troublesome the gain from pasture is too small with young calves to pay for the loss they undergo from vexation and blood-flow. A feeding trough should be placed in the pasture and grain fed daily, morning and evening. With fair treatment, the calves will go into winter quarters gaining a pound and a half a day, which means a profit to the owner if he is ever to get one from them.

This leads me to another point: In my experience a calf born in fall or winter is worth two born in the spring for profit. A spring calf is so young that it gets little good from pasture the first season, for by the time it can fight flies successfully and crop grass enough to really aid in nourishing it, winter is at hand and it is placed on dry feed. The fall-born calf comes out in spring-time large enough and sufficiently vigorous to fight its own battles and gets the benefits of the whole season's pasture. Whatever plan we pursue, let us bear in mind that it takes fully half the food an animal can consume to sustain it, and that our profits come from the last half only.

## A DRIVE AMONG JAPANESE FARMS.

W. H. W. CAMPBELL, CALIFORNIA.

In a farming country like Japan, where in the best districts the roads are as smooth as a floor, jinrikisha travel affords the jolliest of opportunities for observation. The jinrikisha, a Chinese invention, is an overgrown doll chaise, of a size to carry one or two men, and drawn by a team of one, two or three coolies. I never tried the double-seated article, but can vouch for the delights of the jinrikisha solo. A rubber air cushion is desirable for the small of the back, and two lively and ambitious coolies for motors. They whisk you over the road at a steady pace of six miles an hour on the level —sometimes exceeding that rate—and will average nearly five miles on mixed grades. I have one record of nine and three-fifth miles made in one hour and twenty-three minutes by a single coolie on a level. Whatever pace you put your team to it will keep with surprising uniformity, and you are not bothered with the vociferation of "get up" and the malign whirl of the whip lash.

### RICE CULTURE.

My first drive in one of these baby vehicles was into a rice region. The fields were cut up into all sizes, and arranged upon ever varying levels. Some were but a few feet square, while a quarter of an acre was a large field. The best land yields fifty bushels an acre, more or less, and the poorest about thirty. It is rare to find two adjacent fields on the same level. Sloping land is of course more convenient for irrigation, but on this flat area through which we were traveling the little rice fields were laboriously divided up at differing hights, so that the water might be made to flow easily from one to the other. The water is raised to the higher patches mostly by treadmill pumps. We were on the ground in season to witness the earlier stages of rice cultivation. In some fields the bare stubs of the last crop were dismally peering out of the mud. In others laborers were tearing up the stubs with heavy-pronged forks, standing nearly to the hips in water and slime. Bullocks drawing long-toothed harrows were engaged in the same operation. Wooden plows were also at work, mere stirring-up implements of wood with one handle. They had a rounded nose, fortified with an iron chisel point beveled downward. Then there was a rude plow with broad iron share for turning a shallow furrow, and heavy oblong hoes for working the soil over and over. Grading scoops completed the grand utensils, but for shaping the causeways, or narrow dykes between the fields, the coolies used the usual hand weapons. In some of the fields the rice was already showing thickly, about six inches in hight, giving a beautiful variety to the dismal landscape of mud and scum. In other areas the seedling plants were being set out in rows, six inches apart each way. The crop is sown in May and reaped in October or November, being grubbed or puddled three times during the season. This means that the whole population wade into the slime, pull out the weeds, and stir up the mud about the roots of the plants.

### THE GRAIN FIELDS.

All this was interesting, for it was thoroughly novel. But more enjoyable was a dash through the grain fields a little later on. The first thing that struck us in the barley and wheat region was the peculiar furrows. They were very shallow at first, varying somewhat in depth, and considerably in width and architecture, so to speak. They were in the rough at the outset, so far as anything in Japan is entitled to that character, though they would be smooth and elegant furrows anywhere else. Then they began to be sloped up slanting, smoothed off as evenly as the sides of a house. Others were squared with mathematical precision. On the ridges the barley is sown in thick-set rows, apparently by hand. On the narrower ridges but a single row appeared; on the broader ones were two rows, and more rarely three. Outside these grain rows the ridges were utilized for other crops, mostly rows of buckwheat, but we saw also sweet potatoes, turnips, beans and the like. In one place we observed a man watering this extra crop, which appeared odd, as the ground seemed moist enough. To accomplish this primitive irrigation he carried two buckets slung over his shoulders on a pole, and used a wooden hand dipper with a slit in the side at the bottom, which let out a thin disk of water. Throughout the fields of this vast region were numerous wells, with the old-fashioned well-sweep. Not only the ridges but the furrows themselves are

sometimes utilized for crops. The only thing we saw growing there, however, was what our courier informed us was bird seed.

Aside from the barley was wheat also, used mostly for the manufacture of vermicelli—for we did not discover any use of bread by the Japs, except in rare cases where the custom had been borrowed from Europeans. There were immense fields also of what our guide called "oil plant," which we took to be rape seed. This crop was being harvested, as also was the barley in warm localities, it being the latter part of May. There were also large patches of beans and peas, and of the thin grass-like reed whose pith furnishes Japanese lamps with wicking. We were, however, more occupied with the style and character of the farming than with crop statistics. And this style was really gardening on a grand scale. The nice little furrows, to which I have referred, all had the appearance of being carefully patted by hand, so smooth, hard and even were their surfaces.

### ORNAMENTAL BOUNDARY LINES.

Then, in addition to the nice regularity of the sown crops, there was another peculiar gardening feature. No fences or hedges appeared in the fields, for good land is too valuable, being worth five to nine hundred dollars the acre, and even more in some cases. Boundaries are marked by stakes or stones, with the owner's name or symbol attached. This is not difficult to regulate, as many of the patches are very small. But in place of fences there were crop boundaries in many places on the rim of the fields. For example, a thickly-sown row of wheat would extend all around a barley field. The rows of grain usually ran with the ends toward the road, and the bordering row of another crop had a pretty effect. In some cases, however, the grain rows would run one way for a certain distance and then would come another patch sown at right angles. This was also quite novel and pieturesque. Sometimes the ornamental border would be of the same crop, as barley around barley, but this was not usually the case. One field gave us a very pretty effect. It was a small area planted to peas with parti-colored blossoms. Its border was a thick row of the white-flowered variety. As all were in bloom the effect was charming.

### WEED CULTURE.

The weeding of these fields is perfect, and our home cultivators might take a lesson from the heathen Japs in this respect. Numbers of women were crouched between the files of barley weeding by hand. With the furrow system the cultivator is out of place; and, moreover, hand work is the rule in this crowded country, and in a day's drive of thirty-two miles we only saw two horses. Where animals were employed they were bullocks or wretched little cows, which were spayed in many cases. All were shod with sandals of rice straw. The weeding women were attended by boys, who carefully lugged the spoil out of the fields in baskets or mats. Near the scattered farm houses the weeds were spread out to cure. They are utilized as food for people and cattle, and for bedding for the beasts, but mostly for manure. Along the roadsides men were cutting grass and weeds with short, curved-bladed knives. In one little grove men and boys were weeding by hand, sparing only the pretty and harmless flowering plants and shrubs. The roadsides were permitted also to retain some of the flowering weeds, buttercups, dandelions, chickweed and the like, but no mercy was shown to any growth of pestilent propensities. There was some yellow dock here and there, but we were surprised at being informed that the omnivorous Japs had not discovered the beauty of its leaves for greens, although they do eat the dandelion to some extent. In fact one might say that weed farming was a genuine part of the Japanese agricultural system, since the entire crop was utilized in some fashion, either for forage, food, bedding, beauty, mulching or manure. Not a savage plant was allowed to lead a useless life, or to devote its energies to the undoing of the farmer's work. Though the harmless and pretty weeds were in some cases permitted to flourish in the road gutters as well as the borders—and this is no joke—in such cases they were themselves sedulously weeded. It does not take deep or intense reflection to perceive that this thorough system of Jap weed culture, so to speak, relieves the farmers of one heavy tax on their industry, which their brethren in America lazily and good-naturedly abandon themselves to paying.

**Cooked Food for Swine.**—Wm. Exeler, Bureau Co., Ill., writes us "I have incurred considerable expense in the purchase and fitting up of engine, boiler, mill, and vats to cook food for swine. I had twenty-five sows and one hundred pigs, and my next neighbor had about the same number; but his pigs were about two months older than mine. I ground the corn and cooked the meal, and he fed his corn whole and dry. When we came to compare notes I was surprised to find that he was feeding about three times as much corn as I, with no better results. In this part of the country it is quite usual for farmers to feed both cattle and hogs, allowing the latter to follow the former and pick up the undigested corn. It is a very cheap labor-saving method."

## DEHORNING BEEF CATTLE.

LESLIE H. ADAMS, WISCONSIN EXPERIMENT STATION.

Horns are being sawed off by men holding all degrees of opinions as to the merits of the practice, from the dairyman who dehorns all his own cows down to the man who believes it a wise precaution in the case of vicious bulls, but otherwise unnecessary. However, the verdict of the majority of the most progressive beef producers in the West is that horns must go, on general principles. The cattle that formerly ranged the Texan plains, and whose very existence depended upon the skill with which they used their horns, resulted in producing a terrible weapon, and have furnished a plain case of the "survival of the fittest," but the farmer of to-day does not require the boss steers in his yard to give hourly exhibitions of their inherited tendencies to waltz their weaker companions around the yard.

I dehorned eight three-year old steers last fall; the operations were performed the second day after coming to the farm. They were then divided into two lots of four each and turned into two feeding rooms, each twenty-five by twenty-six feet, where they remained for the winter. I will add that we could have turned eight more in with entire safety. These steers made a stubborn fight when they were dehorned, but they never refused a feed on account of the operation. They are as easy to handle as sheep, and like them, crowd up to the feeding trough.

William Ogilvie, one of the largest feeders and dealers in this section, and a man who regarded the practice of dehorning with disfavor at first, was recently convinced of the benefits derived, when he saw a bunch of steers crowd around a pile of corn on the ground with heads close together, quietly eating. He at once had his entire herd of two hundred head or more dehorned, and the results have been very satisfactory. A. O. Fox, Oregon, Wis., another large feeder and a man who keeps thoroughly abreast with the times, has recently dispensed with the horns of a very large herd. Another farmer near Madison, after operating upon his own cattle, has been traveling all over his own and adjoining counties, dehorning for his neighbors at ten cents per head.

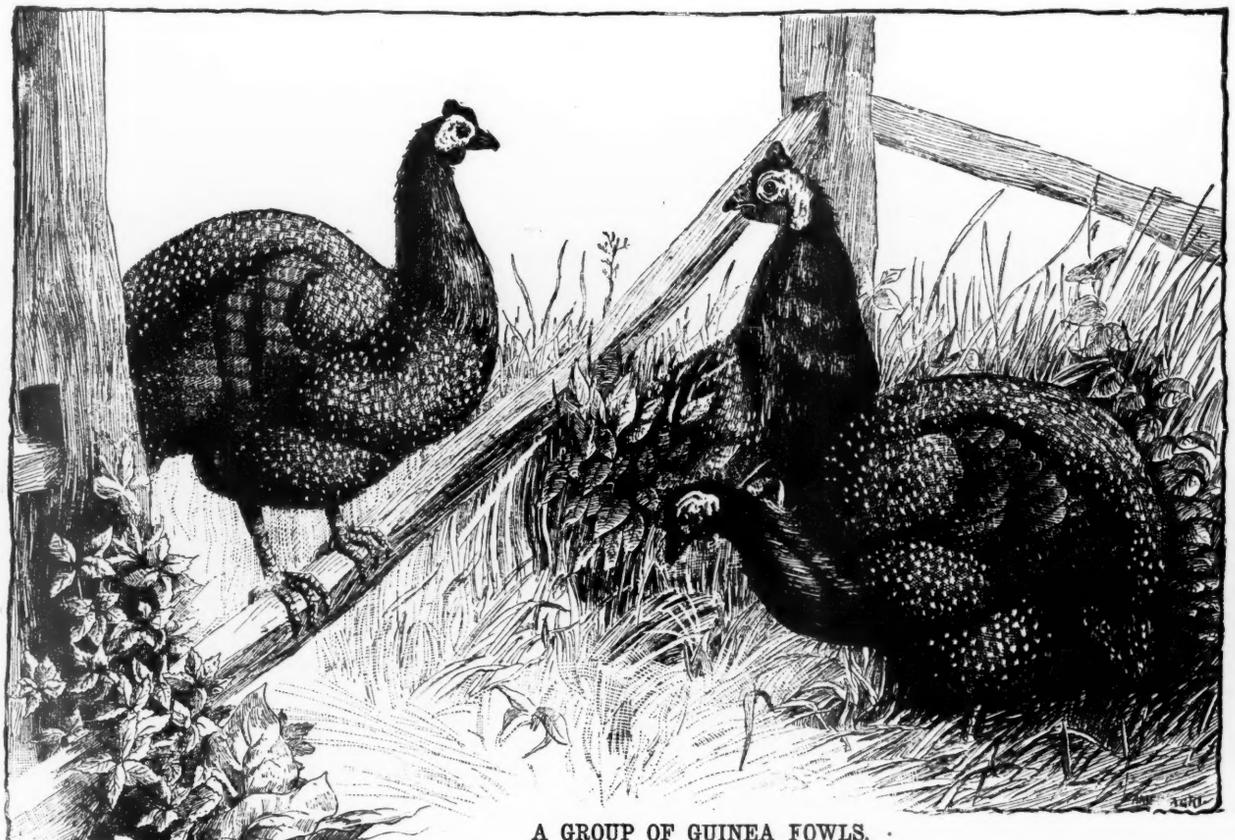
With the practice so thoroughly established, no one need fear the results. Once having tried it I am sure all will agree with me that dehorning is a live question deserving impartial investigation.

**New Developments in Barley Culture.**—The cultivation of barley has recently assumed exceptional importance in Europe. M. Tisserand, French Minister of Agriculture, devotes a special bulletin to barley, advocating its more extensive culture. He recommends a careful selection of varieties, in the effort to rival the crops of Bohemia, Moravia, etc., which never suffice to fill the market. Also a scientific and thorough cultivation, by which barley can be made as profitable as wheat. One great advantage of barley is its adaptation to nearly all climates and a great variety of soils. At a recent meeting of the French Academy of Sciences, M. Ballande read an interesting paper on the development of cereals. The point of greatest interest brought out was this: Experiments have shown that during the eight or ten days preceding the customary date of harvest, the development of cereals was mostly confined to the heads, and their complete maturing (consisting mostly of loss of water) would proceed as well with the plants cut as standing. Hence he urged the advancement of the harvest by this term of eight or ten days, or as soon as the grains assumed the doughy form. This suggestion is of special importance in some districts of France, where it is common to follow the grain crop with buckwheat, which at the end of the season is liable to injury from frost. The hint of M. Ballande may, however, be worth something to American farmers. If it would induce the barley-hay growers of California to anticipate their usual mowing by ten days, it would be a boon indeed. When the Eastern visitor is compelled to pay twenty dollars and upwards a ton for barley hay, that is bad enough, but when, in addition to that, he has to spend an hour or two daily pulling tough barley beards from his horse's lips and gums, and in curing the sores caused by them, it is an aggravation of the evil.

## GUINEA FOWLS.

The quaint, restless, clamorous, speckled Guinea fowls, which were so common a few years ago, seem to have fallen into disfavor. Yet they have been bred and raised in domestication for nearly two thousand years, and have many good qualities to commend them. Guinea fowls were brought from Africa into Italy during the early years of the Roman Empire. They were taken to Jamaica two hundred years ago. Finding there a congenial climate, they soon ran wild and multiplied to such an extent as to become troublesome with depredations on the cultivated fields, and have long been hunted as wild game.

The Guinea fowl possesses much beauty of color and form. The crimson helmet and wattles, blueish gray plumage, spangled and barred with white, gracefully poised head and plump body, all go to make a strikingly handsome bird. It also has substantial qualities which show in the egg-basket and on the gridiron. Guinea fowls, in a state of nature, are monogamous, pairing like pigeons, and remaining very faithful to each other. But in domestication they have been taught to be more gregarious, and two, to four



A GROUP OF GUINEA FOWLS.

hens are kept for every male. Still if the main object of keeping them is to raise young, it is better to follow nature and keep the breeding fowls in pairs. There is such a close resemblance between the sexes that it is difficult to distinguish them at a glance. But the difference becomes apparent by listening to the cries emitted. That of the hen consists of two harsh grating notes like the creak of an ungreased axle, and sounding like the two syllables "come back!" incessantly repeated. The note of the male is an occasional shrill mournful cry. The Guinea hen is very shy and secretive with her nest, hiding it in obscure and out-of-the-way places, and deserting it if disturbed. The eggs are smaller than average hens' eggs, but are richer and more nutritious. The period of incubation is from twenty-six to twenty-eight days, and the chicks are beautiful and interesting little creatures with bright orange bills and legs and striped down. They are very strong and lively, but require great care for the first few weeks. They must be fed as soon as they are out of the shell, and at frequent intervals until they begin to feather out, when they may be allowed to run free with the mother hen. They require about the same kind of food as young turkeys. For village homes or other suburban places, Guinea fowls can scarcely be considered as desirable, on account of their ceaseless clamor and restless disposition. But on the farm, where there is plenty of room, they are well worth keeping. There is a very general belief, whether correct or not, that the strident note of the hens scares hawks away from the farmyard. But if Guinea fowls are a protection by day, their habit of roosting in trees betrays them to the large owls at night.

The Guinea fowl is really a tamed, rather than a domesticated bird; centuries of breeding and care in captivity have not modified it in form and color, or dispelled its wild, shy instincts.

## SCREENINGS FROM THE GRAINFIELDS.

Sowing shrunken wheat is an attempt to cheat nature with light coin.

He who well drains, manures and prepares the ground, can grow profitable crops of wheat on almost every soil.

It is a general rule, with not more than the usual exceptions, that the finer the seed-bed the larger the yield of wheat.

Wheat can be safely grown on lands that would be ruined by washing and gullying were cultivated crops kept on them.

It pays richly to save wheat straw carefully, though it is used only as an absorbent. Western farmers may smile, but it is true.

The man who whitewashed his granaries with boiling hot wash, putting it in all the cracks, did not fear the miller's examination of his wheat.

Treat your grain crops with an eye to the value of the straw as well as of the grain, and in the spring it will not be said of your cattle, as it was said of Ephraim, that they "feed upon wind."

A patch of rye and timothy seeded together always comes "pat." The rye will make pasture in the spring even earlier than bluegrass, and by the time the rye fails the timothy will be ready. There is nothing like a steady succession of pasturage.

Rye may be sown in the fall and clover on it in the spring. The rye can be cut for the straw (which frequently sells for the same price per ton as the best hay) as soon as the blossom falls, and there will be a good growth of clover for pasture. In this way poor land may be made to yield a respectable income while being improved.

## THE MINISTER'S COW.

REV. J. C. FERNALD, OHIO.

It was necessary to get a cow for our baby. Then began a hunt. My first discovery was that most farmers in our section virtually kept but one cow. Oh, certainly, there would be a herd of cattle—a dozen or fifteen, perhaps. But it would be like this: Mr. Ecks would sell me a cow. I went into his yard at milking time, walked past several that would give two or three quarts at a milking, two or three that would give six at their utmost when fresh, stopped at one which had the true milker's marks, and could be depended on to be a four-gallon cow, and asked her price. The answer was, "I shouldn't want to sell that one." At Mr. Wye's, when I made my pick of the only cow it would really pay to keep, the answer was, "That's the only thing on the place that I won't sell." I soon found that, on numerous farms, the one cow had to keep up the reputation of the herd. There would be two or three who were a tolerable second to her. The others were such as would have demoralized the best ledger that ever was invented, if their food had been entered on the "Dr." side and their milk expected to balance the account.

Autumn was fast coming on, and developed this further fact, that great numbers of cows were already half starved. There had been a drouth, but the full number had been kept in the dry pastures, nothing fed to them, and what didn't grow they had to do without. I went to see one man who had "a fresh Jersey" to sell for forty dollars. She was standing, thin as a rail, and very melancholy, in a wretched, scrubby lot. Near her was a pretty heifer, a little more forlorn. The owner said, "That's a three-year-old. She come in a while ago, but pastur's been rather short, and she hain't done very well. I cut off a piece of her tail the other day to freshen her up a bit!" Poor little cow! Trying to give milk without food, and when she failed under the strain, afforded the stimulus of an amputation as a substitute for something to eat.

Another man told me, not long after, "My whole herd ain't giving so as one good cow ought to." I asked him if he had tried feeding bran or anything when the pasture began to fail. He answered, "No; perhaps it would have been worth while." In fact, here were hundreds of cattle starting in to what proved a hard, cold winter, half starved to begin with. Such a herd would eat every scrap of a great barn full of hay, give no milk worth speaking of the season through, and come out lean and wretched in the spring. It is a question if a cow ever fully recovers from one spell of starvation.

Next "the farrer cow" put in an appearance. She was for sale on every hand. Twenty-five dollars would buy her. She would give from a gallon to six quarts a day, and her great recommendation was the splendid frame of bones to lay meat on, for sale in the spring. Certainly, if ever meat was needed, it was there. Out-door exercise agreed with her, and after snow was on the ground, you would see her standing on the solitary hillside, under a leafless tree, where a placard was tacked up advertising "Pure, Raw Bone," while she mused upon the mysteries of civilization.

Then came recommendations of certain cows which "don't seem to have much bag, but when you begin to milk them, the milk comes." I am ready to testify that it doesn't come. A good cow, like a good business man, will have some visible assets. If she has much milk, she will have a place to keep it in. She should have a good, generous udder, which is shapely after milking, its four sections keeping separate individuality and maintaining the "square" formation. If it all falls together, like an old glove, she may have any amount of indorsements, but she won't have milk. At length, I heard of "a staving good cow," that belonged to a doctor, who however asked "an awful price" for her—fifty dollars. I went to see her; a great, stately Shorthorn, mottled red and white, with just a dash of native blood from the "old Beck stock." She had the short horns of her race; head and limbs small for her size and finely formed; large, soft, kind eyes; deep chest and body, with milk veins as large as her halter rope; and a bag with seven teats, five of which give milk. It seemed as if Nature had tried to double the ordinary milking capacity, and almost succeeded. She—that is the cow, not Nature—had meat on her ribs; her hide was loose, her coat like velvet. She had never been starved nor abused since she was born, and had the sumptuous, patrician look, which even a well-bred animal gets from habitual prosperity. Then her record was of the highest. Never one of her calves had gone to the butcher. A neighbor had one of them, now a three-year-old heifer, for which he would not take seventy-five dollars.

I paid the "awful price," and opened a dairy with one cow. When her beautiful calf came at Thanksgiving time, everything began to overflow with milk. Over and over again we measured it, thirteen quarts, or thirteen quarts and a pint—a safe average of more than six gallons daily. The cream does not separate quite as readily as that of the Jerseys. Her skim-milk is better than we can buy of the milkman. But the cream churns into butter of the finest quality and with great facility, so that churning is a joke in our family. Through the summer she kept up her four gallon average with little diminution, and through the succeeding winter did all that could rationally be expected. Now she is "fresh" again, and we have still the brimming pail and the choice butter, while the two calves she has given us are already winning reputation in the two towns to which they have gone at good prices.

It seems to me that here is a way out for many discouraged dairy farmers, who find that "it don't pay." They will promptly answer, "They can't afford to buy blood stock;" no, nor anything else, so long as they keep those cadaverous, cavernous receptacles capable of containing everything that can be produced on a farm except milk. Let them pick out two or three of the worst ones, and shut them up to fatten; feed them well and get through with them soon. Then they will have some money to buy something with and can buy just one first-class cow of whose milking qualities they are perfectly sure. If possible, they should get one that is in condition to give a full mess immediately, or very soon, so that the profits may begin right off. Then let them fall upon two or three more of those unprofitable servants and treat them better than they were ever treated before in their lives, asking no return till the butcher is ready to give it. Don't mind if the inferior milker is young. That's all the more reason for getting rid of her, because there would be so many years to milk her at a loss. Besides, her beef will be ever so much better eating. Then let the farmer get another carefully picked cow. Soon he will have five or six first-class milkers that will give more than the whole herd sacrificed, with half the feed and half the trouble. It's far easier, as well as pleasanter, to milk six cows than sixteen for the same amount of milk. He can then save all the heifer calves from these choice cattle, taking care that they inherit good qualities from both sides, and he will soon have a herd to be proud of, and that will "pay." It was quite amusing to have our new girl just from the country exclaim, as she lifted the great pail of milk to strain it off, "Mercy! Is all that milk from one cow?" Wouldn't it pay to have every cow on a farm like that one?

## LESSONS WITH A MORAL.

A straw shed is a cheaper stock shelter than is a board fence.

It is not what we produce, but what we utilize that makes the profit.

A weed has no better right to life in the fall than it has in the spring.

On the farm, as elsewhere, misfortune is the shadow of carelessness.

A good picture of folly would be a man burning the straw his land had grown.

It is noticeable that the large majority of vicious horses are handled by bad-tempered men.

Don't allow the threshers' engine in your yard unless there is a good screen over the smoke stack.

Ranching has become gambling on the chances that thousands of animals will not starve or freeze.

Many men wear out a dime's worth of shoe leather to obtain from a neighbor the gift of five cents' of grindstone.

Many a boy has been driven from the farm by being compelled to do chores while the men were nooning under the trees.

Some way the few days the boys went fishing are found at the end of the year not to have lessened the amount of work done.

Make your farm such that poor animals would disgrace it; make your animals such that a poor farm would be unfit for them.

Rather than drive your cattle a half-mile through heat and dust to drink at pools or the creek, sell enough to sink a strong well.

The water that goes to the ocean will float back in clouds and fall in drops; but the substance carried from the manure heap by the water will not come back.

The monotony of work tires about as much as the exercise. For a real restful diversion commend us to the turning up of a bumblebees' nest unexpectedly.

## A CAPACIOUS OCTAGON BARN.

The barn, of which Figure 1 gives a perspective view, is forty-four feet across from side to side, with a wing twenty-eight by fifteen feet. The basement, Figure 2, is of stone, laid in lime mortar, but in situations where gravel and cement are abundant it may be built of concrete. Passage ways, A, are provided with tramways upon which a feed-car may be run, affording ready communication between the feed-room, B, and the various stalls, of which those marked C are for horses and F for cattle. At the intersection of the tramways is a turntable, I, by means of which the feed-car may be run upon either lateral track. The spaces marked H may be used for box stalls or pens for pigs, sheep or calves. The feed-room, B, is provided with the boiler, K, a chest, L, for cooking and steaming feed, and the water-tank, M, which may be supplied by rain water from the roof or a pump operated by a windmill. In the rear of the horse stalls at the left of the main entrance is a harness closet, D, well lighted and roomy. Adjoining are the calf-pens marked E, and at the ends of the further range of cattle stalls are two others. The inner and outer doors are all indicated by a letter J. The basement of the wing, N, is devoted to corn-cribs and the storage of wagons and implements. Adjoining it and beneath the inclined driveway is a root cellar, O. One section of the roof is extended downward to form an open shed, P.

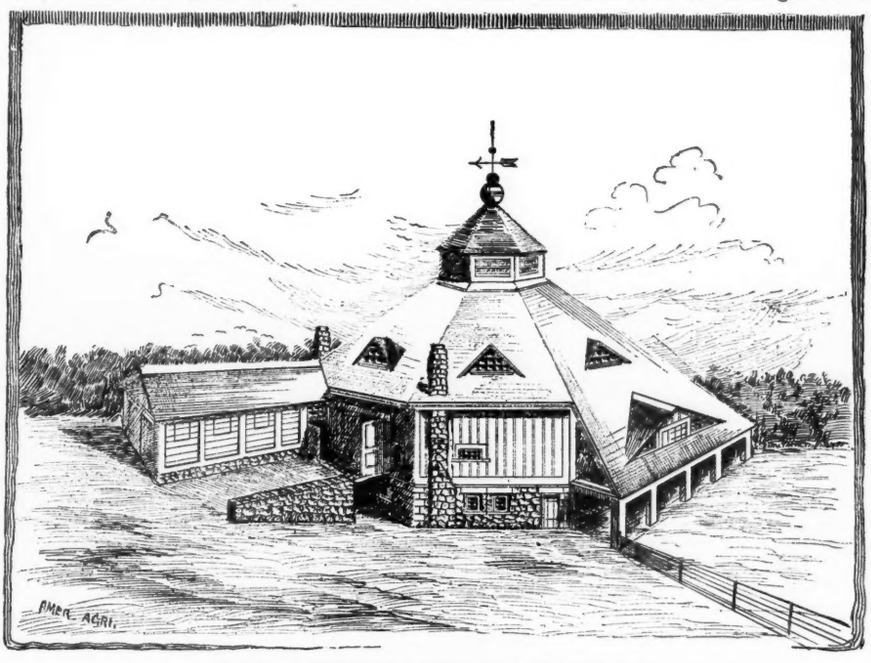



FIG. 1.—PERSPECTIVE VIEW OF OCTAGON BARN.

The main floor, Figure 3, is devoted principally to the storage of hay and grain. The granary, A, is furnished with bins for various kinds of grain and feed, and two shutes, B B, lead to the steam box in the basement. A hatchway, C, opens directly over the tramway and through it any feed may be dropped directly into the feed car below. The shutes marked E lead to the hay-racks of the horse stalls in the basement. A large ventilator, D, extends to the cupola on the apex of the roof and also serves as a shute for hay and straw. The doors on the floor are all marked F. In the wing, the large room, H, is for tools and small machinery, and G is a general repair shop with a chimney, L. A narrow corn-crib, K, extends across one side of the larger room, filled from the outside room. The drive-way and bridge are respectively marked J and I.

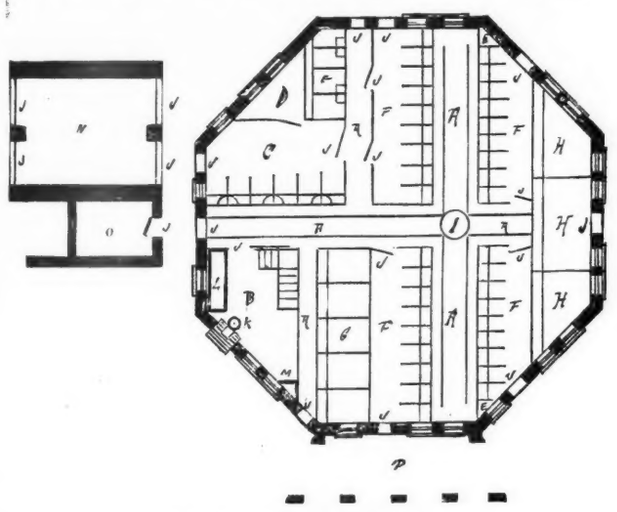


FIG. 2.—PLAN OF BASEMENT.

The barn was designed by Sheldon F. Smith, York Co., Pa., who writes us as follows concerning the general plan: "The live-stock of whatever kind can be fed from the alleys conveniently and in the least possible time. If desired a tank can be built over the work-shop in the wing, and water run to the feeding room and each stall, which will give the stock water at all times. This is better than to allow milch cows in winter to go to the watering trough in the barn yard, waiting to have the ice broken before they can get any water, which then chills their system and seriously checks the flow of milk. The partition between the horse and cattle stable should be made to separate them entirely. The harness room keeps the harness free from dust and ammonia, and if desired, a work-bench may be put in for repairing harness when there is not much else to do. There can be no excuse for allowing machines and tools to lie out in the fields or about the out-buildings, as there is ample room on the two floors of the annex. On the lower floor one can drive in with large machines and wagons, unhitch, and allow the horses to go directly into the stable. In the drive-way to the barn floor an opening should be made, through which to unload roots right into the cellar. The latter being near the feeding-room they can be fed with no waste of time. Between the tool-room on the second floor and the work-shop is a wide sliding-door, which allows any machine or tools to be repaired or painted with little trouble. A stove can be put in during the winter. The granary being over the feeding-room and connected with it by shutes, all feed can be dropped direct into mixing-box. In threshing, the grain can be easily put in by one man."

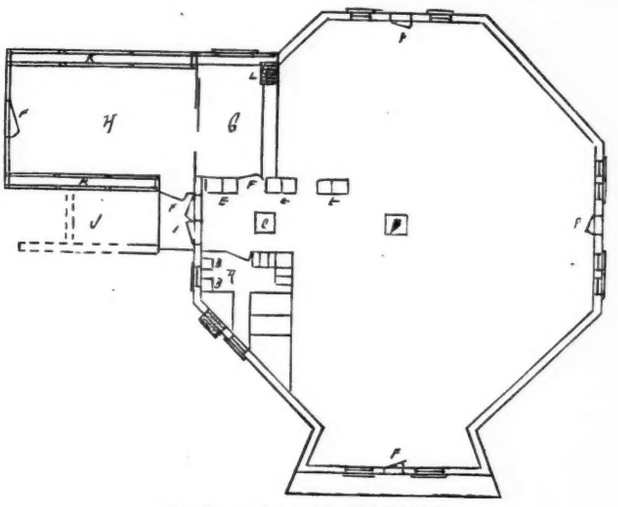


FIG. 3.—PLAN OF FIRST FLOOR.

**The Tight Rein.**—Most farmers who give no particular attention to horses usually drive with a loose rein. This is well enough with the "old family horse" in whom you have perfect confidence. It is never safe, however, with a young or spirited horse. Never drive such an animal with so loose a rein that you cannot instantly command the situation, whatever happens.

## CHEESE FACTORIES IN MAINE.

Z. A. GILBERT, SECRETARY OF THE MAINE BOARD OF AGRICULTURE.

Some fifteen years ago a large number of cheese factories were built in Maine. The interest in coöperative cheese-making was awakened by the active efforts of a few individuals who had become familar with the business as then carried on in Herkimer County and other sections of New York. Without a full comparison of conditions prevailing in Maine, with what existed in the section of country where factory cheese making had proved so successful, the argument was that if it was so profitable there it must prove so on the low-priced yet productive lands of Maine. The fever raged and the factories were built. Some of them were located in our best dairy districts; more were built where it was claimed that dairying ought to be developed; a few were established where there were neither cows nor conditions favorable to coöperative work of this kind. To understand the situation, it should be known that while there is much good land in Maine, yet over a large part of the State it is somewhat broken and does not lie in those broad tracts of continuous good lands that characterize the celebrated cheese-making sections of the country. The result is that the farms are comparatively small and the herds of cows, even in the best dairy sections, are small. Generally it is not practicable to centralize a large quantity of milk at any given point without transportation over long distances; in any event, it must be the property of a considerable number of individual farmers.

A coöperative cheese factory cannot be profitable to any one connected with it without a considerable quantity of milk. Over this fact our factories, built in dry places stumbled and fell the the first season. The fact of little milk caused high cost of making; in turn, high cost prevented any increase of milk and even cut off trial patrons. So the business in such places killed itself. Where the needed quantity of milk was received, a portion must come over long distances. This was soon found to be too expensive, the distant patronage began to drop off, and the business was killed by slow contraction in place of the expansion which was confidently looked for by the projectors. A few factories dropped into centers where the needed quantity of milk was obtained from a narrow circuit. These have prospered, cows have multiplied, the business has increased and is in good favor at the present time.

Now the coöperative creameries on the cream gathering plan have been established over the wreck of the cheese making, and are a complete success. It costs less to collect cream from a given circuit, whether wide or narrow, than it does to deliver the whole milk to the same point; also, the collection of cream being done from the factory, the work is systematized and carried on in a business-like manner and at the lowest possible cost. Furthermore, the collection goes into the cost of manufacture and is apportioned equally on the butter made, whether the patron is located near the factory or remote, thus giving strict equity to all. For these reasons it is practicable to collect cream over a far wider circuit than it is to deliver milk. The cream gathering system of butter making is a success, where factory cheese making was of necessity a failure.

There is a lesson from this both to the cheese maker and the creamery manager. The cost of manufacture (and sale) must be kept to a low figure. There is no margin for anything different.

## PLANTAIN IN GRASS LAND.

A subscriber in Lancaster Co., Pa., is greatly troubled by the growth of plantain in his fields. He does not state which species of plantain it is, whether the "broad-leaved" *Plantago major*, or the narrow-leaved *P. lanceolata*, generally called rib-grass and ripple-grass, though it is not a grass at all. Practically it makes but little difference which species, save that by being able to recognize the seeds when they occur in grass seed we may avoid sowing the seeds of weeds. Our correspondent writes us: "I have limed, manured, plowed and cultivated, but in a few years the plantain comes in, literally covers the ground and chokes out the grass." He wishes to know the best method of banishing plantain from grass fields.

The plants we call weeds grow in the same manner as those we value as our crops. They grow from the seed and require the same nourishment from the soil. If weeds are crowded by plants of their own or by crop plants they will not flourish. Weeds are said to "come in" in some mysterious way. We are not told that potatoes "come in," or that rye or oats "come in;" for we know that to have a crop of either of these we must "put them" or "bring them in." So with all weeds, they are "brought in." Take the case of plantain; it has been "brought in" as thoroughly as if the object were to raise a crop of it. Manure is one great vehicle in which the seeds of weeds are carried upon our lands. Very rarely is manure used on our farms sufficiently heated in fermentation to destroy the vitality of seeds. Weeds infest our meadows because they are sown. There is no seed more commonly mixed with grass seed than that of the narrow-leaved plantain. When one sows grass seed of any kind, he is almost certain to sow plantain also. It avails our correspondent little to break up, lime or manure his field, if after getting rid of one crop of plantain he immediately re-sows it. He may have sown some grass seed, but did he examine his seed to learn what he was sowing? How many farmers examine the seeds they sow to see what they are sowing? How many know the seeds of plantain, of Canada thistles, and of many other weeds which "come in" to their fields? Having his land thoroughly stocked with plantain, our friend should consider if it is an unmitigated nuisance.

Here the question as to which kind of plantain it is, becomes of importance. It is most likely to be narrow-leaved plantain, and as people in England and Wales sow the seeds of this, both with grass seeds and by itself, for its forage, it is worth while to consider if it may not have some value. In Europe, cattle are fond of the plantain, but it is for sheep that it is especially valued. If our correspondent does not raise sheep it may be well to try a small flock. There is already abundant pasturage, and probably there is no better method of getting rid of the plantain than close grazing with sheep.

## HOW TO KEEP ONIONS AND ONION SETS.

If the onions are thoroughly ripe there is no difficulty in keeping them till spring. But if they are immature, with thick green necks, the only way to keep them is the old-fashioned method of "tracing." Take two or three onions and tie them together with a string round the necks. Then place another onion on the trace and wind the string round the neck, and then another and another, till you have a string or trace of onions a yard long. Hang this up in a cool, dry room. If the onions are perfectly ripe and dry they can be spread out four or five inches thick on shelves or on the floor of an airy room. If somewhat green, but free from "scullions," spread them out thinner and turn occasionally till you get them dry and firm.

If you do not want to sell or use the onions till spring a convenient way to keep them is to put them in a dry place and let them freeze. All that is necessary is to keep them dry and prevent their thawing. They will come out of their winter quarters fresh and firm, and will keep just as well as those that have not been frozen. When wanted for sale during the winter a good plan is to keep the onions in slatted bushel boxes. Keep them in a cool, dry room, not in a damp cellar. The boxes can be piled on top of each other and in rows with an inch or so of space between them for ventilation.

Onion sets are easy or difficult to keep according to their quality. If they have long, slim bulbs with many green tops the better plan is either to throw them away or spread them out to dry in an airy room and then on the approach of winter place them on shelves or on a floor six inches deep and let them freeze. Cover with bags or matting or anything that will keep them from thawing. In this way you will get some good sets for your own use, but they will seldom be good enough for the trade.

Good onion sets should be dead ripe in August or September. A good set is a perfectly formed onion in miniature. It is a round, plump, fat little onion with the neck or top withered up to almost nothing. If possible draw them in when the weather is dry and hot and run them through a fanning mill to sift out the sand and dirt and blow away the dried-up leaves of the onions or weeds or any other rubbish that may be with them. It is better to do this when the onions come in dry from the field on a hot day rather than to wait; for the leaves will be drier then than if kept for some time and allowed to sweat. After the dirt and leaves are got rid of, spread the onions out then to dry and keep them dry till winter sets in. During the winter they can be kept frozen or placed on shelves in a cool, dry room, or in boxes or even in barrels. The great point is to keep them dry and cold. If warm and damp they are apt to start to grow. Onion sets are a highly profitable crop, but there are comparatively few who succeed in raising them to perfection. If well grown they are easily kept and sold. They are always in demand in the spring, and the market is rarely overstocked with them.

## THE KERRY BREED OF CATTLE.

The hardy, useful little Kerries are receiving renewed attention in England and Ireland, after ages of undeserved neglect. An association has been formed there to promote pure breeding and the general interests of the breed. Reared as they have been for generations on the wild and unfertile mountains in the extreme west of Ireland, the Kerries have become inured to scant food and exposure, and will thrive upon food and care which would be quite insufficient for the more favored races. In many respects the Kerry cattle resemble the small black and white cattle of Brittany, and it is not improbable that the two breeds had a common origin. After generations of hardship and scant fare, the Kerries are still a symmetrical breed of cattle, as may be seen by the accurate pictures given herewith. Figure 1 is the portrait of a bull owned and kept in the more fertile west of Ireland, and Figure 2 represents a Kerry cow owned by a gentleman in the south of England. These sleek, well-formed specimens of pure Kerries show how readily they respond to good care and feeding. The Kerries can never be expected to supplant the larger breeds of the American farmer and dairy man; but are admirably well adapted to fill the place of the family cow. Gentle, docile, easily kept and requiring but little room for stabling, the Kerry is the very ideal of a cow for a suburban or village resident who requires only milk enough for the daily consumption of a family. Of their milking qualities, Low says: "The peculiar value of the Kerry breed is the adaptation of the female to the purposes of the domestic dairy. In milking properties, the Kerry cow, taking size into account, is equal or superior to any in the British islands. It is the large quantity of milk, yielded by an animal so small, which renders the Kerry cows so generally valued by the cottagers and smaller tenants of Ireland."

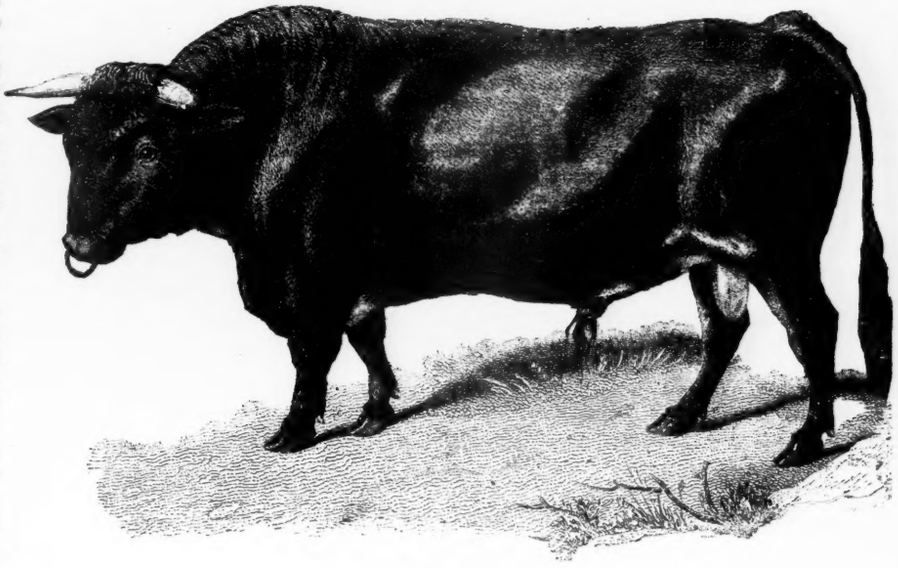


FIG. 1.—PRIZE KERRY BULL.

**Progress in the Ramee Industry.**—Scientific and agricultural Paris has enjoyed a sensation in M. Vial's new process. This was submitted by the government to a committee of experts, whose report is awaited with great interest. Meanwhile a reliable witness of the experiments informs us that if the process succeeds as well on a large scale as it did on a small one, the ramie puzzle seems to be in a way of solution. The process, in essence, consists of the substitution of "a fatty substance," the inventor's secret, for the soda which has hitherto been used in decorticating the ramie fibre, to the great detriment of its strength and beauty. The process dispenses with retorts, high temperature and all elaborate appliances, and is said to be capable of decorticating a mass of 3,000 pounds in two or three hours, simply and cheaply. France is taking a special interest just now in this coming rival of "King Cotton" because of the adaptability of her possessions in Algeria and in the Congo region to the culture of this plant. But we have a not inferior interest in the United States, as the ramee will grow luxuriantly in Colorado, Arizona, and Southern California, and may yet prove one of our most important crops. Several experiments have been tried in California, but abandoned on account of the difficulty and cost of decortication.

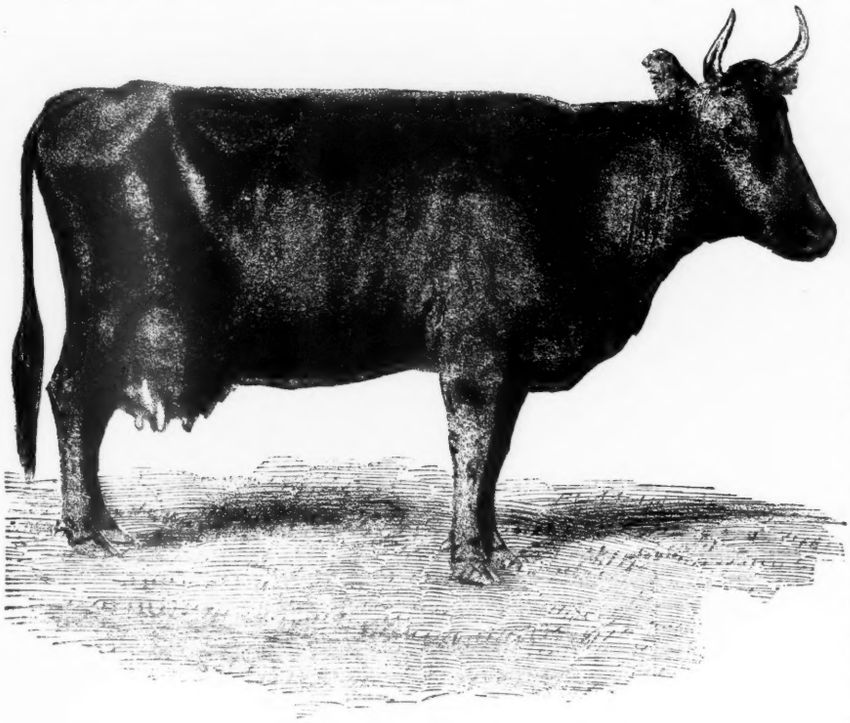


FIG. 2.—PRIZE KERRY COW "FLORA."

**Sowing Oats Without Harrowing.**—It is a common practice to sow clover seed on winter wheat fields early in the spring without harrowing. The small clover seed sinks deep enough in the soft soil to germinate without any covering. It has been recommended to sow oats in the same way. Last spring we sowed several acres of oats in this way and one of our neighbors also sowed an acre or more. But in neither case has the result been as satisfactory as we were given to expect. In fact, while we propose to give the plan another trial, we are compelled to say that sowing oats on the bare land in spring and trusting to the snow and rain and mud to cover them was this year with us and our neighbor a practical failure. But it is seldom that we have so dry and late a spring or one so unfavorable for sowing oats without covering them as the last one has been. All farmers of long experience know that occasionally a crop of grass can be obtained by merely sowing the seed on the surface. We recollect once sowing peas broadcast and before we could finish harrowing heavy rain set in and a portion of the field was left with the peas uncovered on the surface, and yet produced a good crop. It is doubtless so with oats. Occasionally a good crop can be obtained in this way, and it is quite probable that when everything is favorable a larger crop can be obtained than from a crop sown in the usual way later in the spring. But what of it? It is the rule and not the exception that a careful farmer wants to follow, and there can be no question that as a general thing the crop will be enough better when the seed is harrowed in to repay him richly for all his extra time and trouble. Usually it does not pay to leave very much to chance.

## BALING HAY.

The value of our hay crop is greater than of the wheat or cotton crop. Thirty per cent of the crop is sold and fed in towns and cities. The trade in hay was limited until presses were introduced, for the loose hay could not be shipped at a reasonable cost. Baling hay has made the hay crop more profitable and certain, since it makes possible a distant market. It has put hay upon the same basis as wheat or cotton or corn—the farmer need not limit his production to home consumption. Farmers of the West, very few of whom have mows large enough to hold their hay loose, are discovering that it pays to bale hay which is to be fed on the farm. Hay put loose in stacks or even in barracks will receive more damage than the cost of baling it. When baled, the hay occupies so little space comparatively that the shelters, insufficient for it while loose, will now hold it. Or the bales may be piled up and a roof put over them, when the damage will be insignificant. The bales are so compact that the rain, beating against their sides, will not sink in.

When the baling is to assist in the preservation of the hay, the work may be done as fast as the hay is thoroughly cured. The same is true when the baling is done to put the hay in better shape for marketing. It can be baled almost as cheaply as it can be stacked or mowed. The owner of the press can then employ the time after harvest or seeding in baling for his neighbors. This baling can be done at a fixed price per ton, and thus profitable employment may be had during the season when there is little ordinary farm work; or the man with some capital and good judgment can make even more money by buying the loose hay, baling it, and then shipping it to the city.

It is best to buy a portable press run by horse-power. If the press can be driven to the stacks and then set to work in fifteen or

AN IMPROVED CATTLE-CRIB.

twenty minutes, it is a great advantage; for the press should be brought to the hay and not the hay to the press. There is an exception to this: The large hay dealer, and possibly the very extensive hay farmer, should have the steam press. A correspondent in La Salle county, Illinois, writes that he gets from three to four dollars more per ton for baled than for unbaled hay, and that aided by a man and a boy, with two horses, he bales ten tons per day. His press, etc., cost $260. A Chicago firm, extensive hay dealers, who bale hay in Indiana, Illinois and Wisconsin, say the average cost of baling is $1.25 per ton and the profit $2.25 to $2.75 per ton. An Iowa subscriber puts the cost and profit of baling at substantially the same figures. We give figures from these States, because hay baling is assuming large proportions in the West, and the figures show that it should continue to grow. During 1886 the receipts of hay at Chicago were about 150,000 tons, and there are other western markets almost as large. Some of this western hay is part of the nearly a million tons now handled in twelve months in New York, Brooklyn, Jersey City and Newark. It is best to make the bales of about 125 pounds weight; these are most popular in the market. The more compact the bales can be made with the ordinary press, the better, as they take up less space in shipping and storing. Being able to get only half a load in a car will destroy the profits. Three tons baled can be handled as quickly and easily as one ton loose.

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Whatsoever a man soweth, that shall he reap, and nothing else; but he who sows the wind of chess and cockle, reaps the whirlwind.

## HOME-MADE HUSKING GLOVE.

The accompanying illustrations show how to make and use a husking-pin and mitten, which save sore and cold fingers to those who husk corn late in autumn and during the winter. Figure 1 shows the combined arrangement. A common driving glove, with one free finger, is prepared by cutting a slit in its face between the

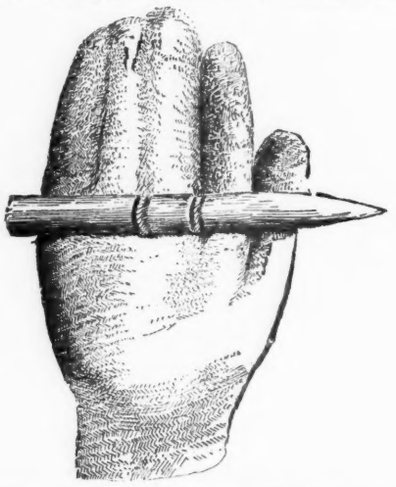


FIG. 1.—HUSKING GLOVE READY FOR USE. FIG. 2.—HUSKING PIN.

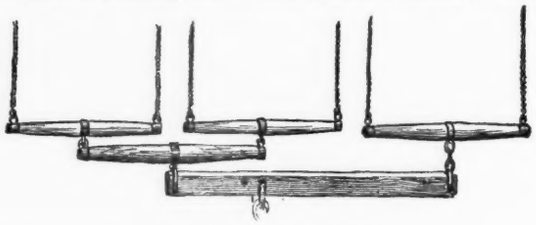
second and third fingers, and a second one between the first and second. A leather string is run through the holes and the ends, tied so as to leave two loops projecting out of the face. The pin is thrust through these loops, the string resting in the notches, as seen in the sketch. Figure 2 shows the pin and a sectional outline of the glove. The former is of hickory or other hard, fine-grained wood, or better still, of bone. In the absence of a pair of driving-gloves, mittens of buckskin or other material will serve the purpose.

## IMPROVED CATTLE CRIBS.

The accompanying illustration, sent us by Mr. Webb Donnell, presents an excellent method of constructing a crib for cattle, which will greatly assist in keeping them clean while occupying their quarters in the stable. A tight crib is constructed with a hinged door in the rear, as shown in the figure. This is opened while the animals are eating their rations. The door is then closed, compelling the animal to move back so that no droppings will fall upon the raised platform on which it stands. Before closing the stable for the night, any droppings which may have fallen while the animals were feeding can be scraped into a gutter in the rear of the stalls, the doors closed, and the following morning will find a clean platform and dry cattle. The bottom of the crib should be raised a little above the floor for convenience in placing feed therein. This arrangement will be found very convenient also when feeding roots or meal. While the doors are still closed the ration can be placed in the crib, the doors being then opened, thus avoiding all interference by the animal either with nose or horns.

## THREE-HORSE EVENER.

E. Z. Ernst, of Kansas, furnishes us a sketch and description of the evener for three horses shown in our illustration. It is made from a piece of scantling two by four inches, of hickory, white oak,



A THREE-HORSE EVENER.

elm or other tough, strong timber. It is four feet long, with a half-inch hole, one inch from each end for a clevis-pin, and a similar hole one foot four inches from one end, and two feet eight inches from the other. The double-tree is attached by its clevis to the short end, and the one-horse whiffle-tree to the long end by a clevis

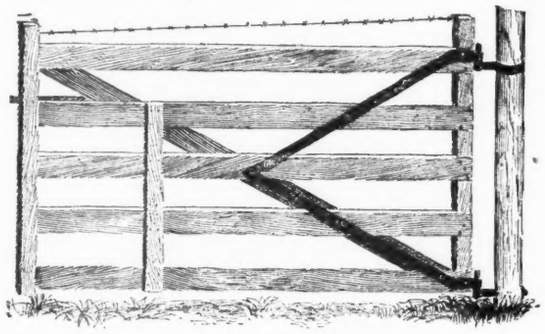
and two links which bring it abreast the other two. In case it is desired to give the single horse an advantage, as when training a colt, a fourth hole is bored one inch nearer the short end, into which the clevis-pin is shifted.

## STRONG GATE HINGES AND BRACE.

Among the many purposes to which old wagon tires may be applied is the gate-hinge illustrated below. An old tire, too much worn for further service in its original capacity, is cut in two at the middle, and one end of each piece is turned with an eye or socket to form half of a hinge. Then four inches from the socket the bar is bent to an angle as shown in the engraving. The other ends of the two pieces are then welded together in the form of a **V**, the width of the open end being governed by that of the gate. The lower hinge is made in the usual manner, with an upright pin at one end, and a thread and nut at the other. The upper one may be made in the form of a band which is driven over the gate-post and fastened by nails driven through holes punched for the purpose in the band. This form of hinge and brace was devised by Leon Hay, Kankakee Co., Ill., who furnished us the sketches for our illustration.

## FARM FIRE DEPARTMENT.

The increasing use of windmills for pumping water, etc., suggests that they could be made the foundation of a fire department on the farm, that would prove efficient in many cases. Three-fourths of the farm conflagrations are discovered so early that the prompt application of twenty gallons of water, and sometimes half this amount, would put out the fire. But it is impossible to



A WELL-BRACED GATE.

get water soon enough when it must be carried to the garret or loft in buckets. With a fourteen foot windmill and a strong double-acting force pump, a continuous stream may be forced a thousand feet and to a hight of a hundred feet. But as the windmill and well are usually near the house and barn, it would rarely be necessary to have the water forced farther than two hundred feet, or raised higher than fifty feet. The pipes are, of course, brought near to, if not into, the barn and house. And with a few feet of hose attached to the hydrant in the yard or building, a supply of water sufficient at the critical moment, would be at command. The hose could be taken through windows or doors. Of course the stream can not be thrown far from the hose, but at the first moments the persons holding the hose can approach near the fire. If it is feared that at such a time there might not be enough breeze to operate the windmill, we have only to remember, how often an account of a conflagration also says "a stiff breeze" or "a strong gale was blowing at the time." When there is not enough air stirring to operate the windmill, a fire may be readily subdued by buckets of water.

## EVERY-DAY RELIGION ON THE FARM.

It is true economy as well as pure religion to make the Sabbath a day of rest.

Before any man goes in debt he should read of the bondage in Egypt of the children of Israel.

Too many have but one rule by which to measure things, and on it the spaces are dollars and cents.

In nine cases out of ten, people are cheated by a dishonest person because they are dishonest themselves.

It is as unjust as it is unwise to shoot the birds because they take a few berries—they have earned a feast.

## THE WILDER PEAR.

The accompanying illustrations of the Wilder Pear were drawn from a specimen received from Charles A. Green, Rochester, N. Y., who informs us that the original tree was found a few years ago on the shore of Lake Erie. It came up wild in a thicket of sprouts and rubbish, and was grafted, in part, to Buffum. The natural fruit was found to be so good the Buffum branches were removed. Since that time the tree has borne profusely each year. Our illustrations, Figs. 1 and 2, show the actual size of the average fruit. In shape it closely resembles the Bartlett; skin smooth, pale yellow with a deep shading of brownish carmine; dots numerous and small. The basin is shallow and regular, the eye nearly closed, sepals long and reflexed; apex rather abrupt with slight cavity; stem short, core closed and small; seeds very small, narrow, pointed, dark; flesh very pale whitish yellow, fine grained and tender. Its quality is very good, resembling the Bartlett, but its flavor is more sprightly, and free from all muskiness; season, middle of August in Western New York. The tree is a vigorous, upright grower; wood dark, resembling Clapp's Favorite; leaves small, and light green.

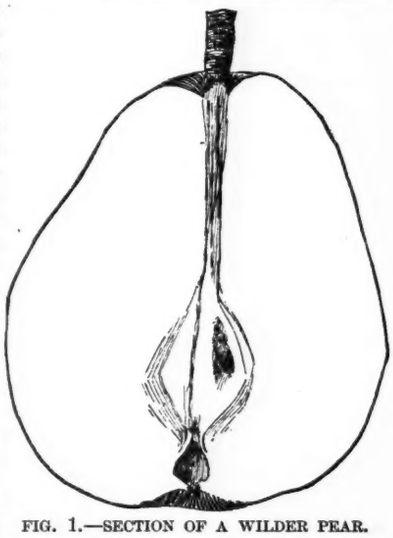


FIG. 1.—SECTION OF A WILDER PEAR.

**Salt for Asparagus Beds.**—"You need not tell me," said an old gardener, "that salt does no good on asparagus. I know better. I have used it for many years and always with good results." "In our own trials," we replied, "we can see no difference in the part of the bed that was dressed with salt and the part that had no salt. One was as good as the other. How do you apply the salt, and when?" "At any time," he replied. "I save all the old brine from the beef and pork barrels and pour it over the bed. You need not be afraid of it. You cannot get enough on to kill the asparagus." Here probably we have the explanation of the wide-spread belief that salt is a special fertilizer for asparagus, while all actual trials seem to prove that it does no good except to kill weeds without hurting the asparagus. The salt used is often in the form of old brine, and this brine contains saltpetre (nitrate of potash), one of the most powerful of all fertilizers, and it also contains a nitrogenous extract from the meat. It is not the salt that makes the asparagus grow so

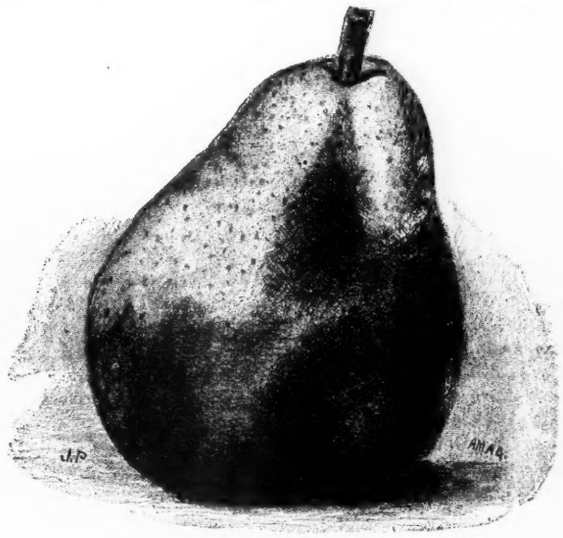


FIG. 2.—THE WILDER PEAR.

luxuriantly, and assume such a dark color, but the nitrogen. An application of sulphate of ammonia or nitrate of soda has the same effect; and in both cases it is due to the nitrogen they furnish.

## PAST AND PRESENT FARMING IN COLORADO.

EMMA J. MELLETTE, BOULDER CO., COLORADO.

In the early days of Colorado, the pioneers found on the creek bottoms a wondrous growth of native grass, waist high and immensely thick. On the bluffs was a carpet of buffalo grass, short, thick and very nutritious. The land these first settlers took up was along the creeks. The bluffs they considered fit only for grazing, and that the hills and uplands would ever be fenced, still less tilled, was an idea foreign to the brain of even the most visionary.

For a long time horse and cattle raising was the only rural industry, and not farms, but cattle ranches, were scattered here and there; and around them could scarcely ever be found as much as a garden. The stock ran on the range through summer and winter; and in those early days before it was overstocked, cattle and horses generally went through the winter in good condition on this short grass which, unless it happened to rain late in the fall, was always cured before frost came. When there was a heavy snow storm, cattle would get pretty hungry, and sometimes starve to death; but horses that paw to bare ground never suffered much even when the snow was deep.

With the advent of the irrigating canal commenced the era of farming. It was found that if supplied with water, the uplands would yield heavy crops of wheat and oats, barley and potatoes. The bluffs and mesas were in active demand, and the scrub cattle that were wont to wander over hills, where never the sign of a fence could be seen, found themselves confronted with long rows of posts and lines of barbed wire. Free pasture was thus curtailed. The buffalo grass, when it has been irrigated for two or three years, gives place to another wild grass which makes excellent hay, but it does not make a heavy crop, so the upland farmer could keep few cattle for want of hay. Now that the range had been mostly fenced, the only way that cattle could be kept, was to feed hay in winter, even in localities where there was still summer feed.

It took the old timers a long time to learn the fact that as the range was fenced, their herds must be diminished or their hay stacks increased, and many cattle were lost. The summer of 1879 was dry, and the grass was very short, so cattle started into the winter poor. A heavy snow fell early; there was no wind; the snow crusted over, so what could cattle without hay do but starve? And starve they did. That winter taught the lesson that fewer and better cattle must be kept. The original scrub has now been largely replaced by good grades and pure-bloods of nearly all breeds. As always follows, better cattle must have better shelter and better feed, and most farmers began to change their mode of caring for stock. There may still be found an occasional one, however, who thinks it doesn't pay to feed even milch cows anything but hay in winter.

With the introduction of alfalfa, farming in Colorado experienced a wonderful impulse; in fact was revolutionized. With alfalfa the farmer on the uplands can not only have hay to feed his team, but hay for more cattle, and hay to sell. Alfalfa is easily raised. Often the seed is simply sown in the spring on sod and harrowed in with a good sharp harrow. Sometimes it is sown on wheat stubble in August and irrigated. Again, the land is plowed and harrowed in the spring, and with the alfalfa is sown wheat or oats. If it be put in very early in the spring a light crop may be cut the first year, but it does not reach its best for three years. Then it may be cut four times in one season, and has been known to produce as high as seven tons to the acre, or nearly two tons to the cutting. If the stand be poor it is kept to raise seed when it will produce from twenty to sixty dollars to the acre. Generally speaking the thinner the plant the heavier and better the seed.

Fruit raising was for a long time an impossibility, but so many experimented on varieties that it is now an established fact that Colorado can raise fruit. Small fruit always did well. Poultry culture is still in its infancy and at least half the eggs and chickens consumed are shipped from Kansas and Nebraska. The Colorado Poultry Association, the yearly shows, and the spread of poultry literature are doing much to open the eyes of farmers to the profits of the business. With the numerous coal mining towns, several large and growing cities, and the mountains alive with quartz miners, the market is excellent. Besides the climate is admirably adapted to profitable poultry raising. The air is dry, and roup does not prevail. The temperature is mild, and even the large combed Leghorn will lay all winter without artificial heat, provided she be kept housed during storms and when it is very cold.

For the Colorado pork producer, there is a future in store. The market is good, and much of the pork here consumed comes with the eggs and chickens, from Nebraska and Kansas. Corn does not produce as heavy a crop here as in the East, but squashes do, and squashes make good pork. Early dropped pigs, a movable pen in an alfalfa field with a feed of milk at night; baked squashes without the seeds as soon as they are ripe and for the last two weeks one meal of corn each day, all make a profitable combination to the farmer who has enough business about him to sell his pork finished, in the shape of bacon, ham and salt sides.

If Colorado had a dog law and no coyotes, sheep raising on farms would be profitable. As it is the sheep must be herded and the herder's wages taken from the profits. Alfalfa is fine sheep feed both as pasture and as hay. The farmer who will buy a flock of wethers in the fall, turn them in on his pasture and stubble fields till snow, then put them in a corral containing sheds open to the south, and feed them all the alfalfa hay they will eat, can sell them fat in the spring without feeding a pound of grain.

The principal disadvantages under which farmers labor in this State are mortgages, a high rate of interest and lack of reservoirs. The mortgages came in many ways. Not a few farmers borrowed money during the first years following the hard winter before mentioned, when fully fifty per cent of the cattle in the State died of hunger. Cattle then were very high; any kind of a cow would bring fifty dollars, and a yearling heifer twenty-five dollars. Those prices couldn't last and farmers who bought at them with borrowed money at two per cent a month were sure to lose.

As to reservoirs, the hills and mountains have been robbed of their timber till the snow melts and starts on its way to the ocean before it is needed for irrigation. A tithe of the water which goes by in the spring, if it were held back in reservoirs and kept till needed, would make the whole of Colorado a garden.

## CIDER VINEGAR.

Good cider vinegar can be made only from good cider. Cider made from ripe apples is stronger than that made earlier, when the apples are yet green. Put the barrel on its side and fill it with good cider to the bung, that the pomace may be thrown out as the cider ferments. Fill up the barrel twice a day while fermentation is in progress. At the close of fermentation the cider should be racked off carefully and put into another clean barrel, or the same one after it has been well washed out. If there are enough barrels, it is better to fill them only half full after fermentation is finished, as this exposes a greater surface to the air. The more air the better the vinegar will make. Hence, a darkened, airy outhouse is better than a close cellar for the storage of the barrels. Cider vinegar is not weakened by exposure to the air or injured by freezing; and if the barrels are only half full there will be no overflow from freezing. It is not necessary to add anything to the cider; nor is it desirable to add anything, except, perhaps, some old vinegar after the cider has fermented. The cider will be converted into vinegar in about twelve months, but will steadily increase in strength.

The tightness required of a cider vinegar barrel has become proverbial. Leakage is what haunts the nights of the vinegar maker. The staves of the vinegar barrel must be free of sap-wood, and twice the usual thickness. Wooden hoops are better than iron ones, as the cider will cut through iron hoops in short order when once it gets to them. Worms, the larvæ of a fly which usually deposits her eggs in the chime, make much bother, and must be carefully guarded against. Naturally enough they prefer sap-wood, and on this account as well as the cider's soaking through sap-wood, it should be avoided. It is said that occasionally painting the barrel with coal oil will kill the larvæ. But it is best to prevent the deposit of the eggs, which may be done by keeping the barrels in a dark place from the middle of March to the beginning of October.

**No Profit in Wintering Poor Animals.**—Now is the time to get rid of the poorer animals. It will not pay to winter them, as better animals will give larger returns for shelter, care and feed. It is not economy to keep a poor animal through any season; but it is most extravagant to keep it through the winter. It is the hight of folly in stock raising to sell the best and keep the worst. True, the best bring the largest prices; but if you sell the best and keep the worst, soon your best will be no better than your worst is now, and your worst will be such that the more you have the poorer you will be. You, by this plan, constantly make your animals poorer; and as the stock raiser makes his animals poorer he makes himself poorer. If he keeps up the process, bankruptcy is as sure as fate. The oppo-

site policy is the winning policy. Sell the poorest and retain the best. And sell enough of the poorer animals that you may buy a few better than the best you now have. This is making your animals constantly better and yourself richer. Soon your worst will bring as much as your best now. If you have not pure-bred animals, sell enough scrubs or grades to buy an animal of each sex, pure-bred. Hold fast to the full-blooded produce and to the highest grades. Almost before you are aware of it you will have only pure-bred animals. If once we start with pure-bred animals, the increase of breeding makes us rich in flocks and herds of the best blood in what, when the goal is reached, seems a very short time.

## PREPARING BEES FOR WINTER QUARTERS.

A. H. DUFF, OHIO.

This work is better begun as early as the first of September, and should never be put off later than the first of October. During August and September, if little or no honey can be gathered, many queens entirely cease laying, and when winter comes on such colonies are stocked with old bees which must die in large numbers before spring. Bees that are hatched during the autumn months are the only available stock to withstand the winter. If the swarms are found without brood, they should be fed a small portion daily to induce brood rearing. Suspension of brood rearing occurs with colonies, whether they have a heavy or light supply of honey, and the only way in which we can secure a force of young bees at this time of year is by this stimulative feeding. Usually one gill to one half pint of syrup daily is sufficient for this purpose. Feeding may continue a week or ten days, if the colony have abundant stores to carry them through the winter; if not, they should be fed early and more heavily. It may be given them as liberally as they can store it away, until they have a sufficient supply for food during the winter. Bees should not be disturbed during winter by feeding or otherwise. It should be done early, during warm weather, so as to give the bees an opportunity to seal it over before cold weather. Late feeding is the cause of much unsealed honey in the hive. This is an unwholesome diet, as the moisture arising from the bees in cold weather condenses it and it becomes diluted. This produces dysentery, the dreaded winter disease of bees.

Every colony should have twenty-five or thirty pounds of good sealed honey to carry it through the winter properly. The only feed we would recommend is granulated sugar, thoroughly melted by adding a little water and bringing it to the boiling point, but it must not boil for any length of time. It should not be thick when fed, but of the consistency of thin molasses. Before feeding begins it would be well to arrange the brood nest. The center of the hive should contain two or three combs, empty in the center, and lined about the top and ends with sealed honey. Other frames of comb, heavy with honey, may be placed at the sides until the hive is filled. During the autumn months we often find frames of comb full of pollen near the brood nest. These should be removed, and frames of honey inserted in their places; past experience has shown that it is not best to confine bees to frames of pollen as a winter food, as it has a tendency to produce an unhealthy condition. Pollen is only necessary when brood rearing is carried on, and should be removed when not needed, but it should be returned the following spring, as early as the weather will permit.

Bees surely need some other treatment during winter than leaving them out in ordinary hives. Different modes of wintering have been adopted, but two methods are most in vogue. One is to place them in cellars, and the other in chaff protection on summer stands, or in other words, in chaff hives. The latter plan is the more extensively practiced. The chaff hive is an outside box or shell enclosing the hive of bees and much larger. It admits a packing space of two or three inches around the sides, ends and bottom, and from six to ten inches over the top. It is not best to stint this space for packing. We have used chaff hives of different sizes and invariably find the largest size to be the best; four inches of packing space and twelve above the colony, have never failed to give better results than two inches below and six above. A separate shell for chaff is much better than a double walled hive with the space filled with chaff. The hives may be set in or taken out, and may be of either one or two stories, the upper story or surplus chamber being removed in autumn, and the whole space filled with loose chaff. In this manner the chaff entirely surrounds the bees with the exception of the entrance, which should be left open, so that the bees may come forth at will when the weather permits. The covering over the bees, and directly under the chaff, should consist of a cloth only, and no board or wood covering should be used. The cloth covering will allow the moisture arising from the bees to pass off, and the chaff above will absorb it; thus the colony will be kept dry. Bees should be placed in winter quarters before cold weather comes and left during winter in perfect quiet. Any disturbance during cold weather is damaging to them. The apiary should be secluded entirely from stock of any kind, and even a constantly traveled pathway close to hives is undesirable. Apiaries should not be located close to railroads for this reason. If any colony is found destitute of stores at any time during winter, a frame of sealed honey can be given to save them; if this is not at hand, slabs of candy can be made from granulated sugar and placed on the frames over the cluster where the bees have access to it. Feeding syrup of any kind must be avoided during winter.

## KEEPING GRAPES DURING WINTER.

WILLIAM MEAD PATTISON, PROVINCE OF QUEBEC, CANADA.

The cultivation of out-door grapes for domestic use has become so general that the subject of keeping them for winter use, and the best method, may profitably claim attention. The past season I selected from over one hundred varieties in my grounds forty of those in general cultivation, and a few very recent introductions, to test their keeping qualities. It is the generally received opinion that the thick-skinned native seedlings are the only keepers. This is correct so far as regards preserving flavor, but several hybrids of foreign blood are the best keepers known. The varieties intended to be laid up for winter use should be those only which adhere well to the stem and are not inclined to shrivel soon after removal from the vine. They should be allowed to remain on the vine as long as they are safe from frost; a clear dry day is necessary for picking; careful handling and shallow baskets are important. The room in which they are to be kept for awhile should be well ventilated and the fruit laid out in single layers on tables or in baskets where the air freely circulates, closing the windows at night and in damp weather. In about ten days the stems will be dried out sufficiently to prevent moulding after they are laid away. When danger from this is over, and the stems resemble those of raisins, the time for packing has arrived. I have used baskets for permanent packing, but much prefer shallow trays or boxes of uniform size to be placed one above the other so that each box covers the one below, the uppermost only needing a cover. Until very cold weather the boxes can be piled so as to allow the remaining moisture to escape through a crevice about the width of a knife blade. Before packing, each bunch should be examined, and all injured, cracked and rotten berries removed with suitable scissors; if two layers are packed in a box, a sheet of paper should intervene; the boxes must be kept in a dry, cool room, or passage, at an even temperature. If the thermometer goes much below freezing point a blanket or newspaper can be thrown over them to be removed in mild weather. Looking them over once in the winter and removing defective berries will suffice, the poorest keepers being placed accessible. Under this treatment the best keepers will be in good eatable order as late as February, after which they deteriorate.

**Swine in the Orchard.**—An old friend, a farmer, whose orchard has always been above the average in condition and production, recently told us that he thought much of his success in orcharding was due to his fattening his swine, in the fall and early winter, in the orchard. Our own experience has shown us very plainly that the close association of swine and orchard trees is mutually beneficial. If the swine are given salt and ashes regularly, and a variety of food, they will not peel the trees; and the falling fruit makes a good share of the needed variety. The early windfalls, at least, almost without exception contain larvæ, the presence of these being responsible for the falling of the fruit. The hogs eat the fruit and the larvæ also, and thus prevent their entrance into the earth or lodgment elsewhere; and as a result there is not a swarm of their descendants to blight the fruit the next year. The animals, being much under the trees to get the fruit and the shade, deposit their manure where it will do the most good. In exchange the trees give the animals shade, when high feeding makes shade grateful and wholesome; and vegetable food, when strong feeding of dry grains makes it a necessity to the health and thrift of the animals. If it is desired to evaporate or can the best of the windfalls, the hogs may be shut out during the night and admitted after those windfalls desired have been gathered up.

## THE CREAMERY IN THE NORTHWEST.

R. G. NEWTON, DAKOTA.

The creamery organizer, in and out of petticoats, bids fair to be placed in the same category as the lightning-rod man and wandering tree peddler. The mode of operating practiced by the first-named is to visit some large town, interest some prominent man in the scheme of organizing a creamery there, call a meeting of citizens, show ground plans, elevation, details, etc., of a building and outfit which he will erect and equip for five, six or seven thousand dollars as the case and interest exhibited may seem to warrant. A show is made of the benefits and profits to be derived from the creamery, with a big cold storage attachment, etc., and the organizer has so much faith that he will take from one-fourth to one-half interest in the company. As a result the company is organized, the balance of the stock is taken by subscription, the prominent man whose name heads the list as a starter for $500 or so, is made a present of the amount of stock he has subscribed, by the organizer or his (or her) employers; the rest are to pay cash for all stock they have taken. The buildings are erected, equipped and started; then a little experience shows the par stockholders that the money they have paid in was more than the whole thing cost, but they have to pay interest and dividends on the balance of stock held by the organizer or his employers. As a rule they have everything to learn, and the farmers on whom they depend for material to operate have to be taught, not only how to care for the milk and cream, but also how to feed and care for their cows.

There is no question whatever about the benefits to be derived from a well conducted creamery, not only to the farmers, but to everyone within the limits of its operations. It gives the farmer a cash market for his cream, and enables him to pay cash for his supplies. It gives him an inducement to better his stock, and to employ better and more profitable methods of caring for them, in addition to many other benefits. But all this can be accomplished by less than one-half the money the organizers declare is necessary to have to start the business.

My advice is, if the creamery organizer comes among you, to get all the information you can, then go to work and put up your own buildings, buy your own equipments, hire a first-class butter maker, and commence on a small scale; then work up as the increase warrants.

### HOW WE ORGANIZED OUR CREAMERY COMPANY.

Meetings were called for the purpose of learning how the people felt in relation to the project. General approval being manifested, it was decided to organize. The capital stock was placed at $2,500. The books were opened, and when about half the stock was taken, directors were appointed and articles of incorporation drawn up and approved, and sent to the territorial secretary for recording. Shares were made ten dollars each, payable in five equal monthly installments of twenty per cent. Notes were prepared, and certain of the directors were authorized to solicit subscriptions from every business man in the place; farmers and mechanics also were induced to subscribe. Every subscriber signed a note to the amount of the stock subscribed for, the date of each installment being designated on the face. Plans for the building were obtained and lumber purchased, payments to be made as subscriptions became due. Carpenters were found who would do the work and take stock in payment for the same.

Our building, 24 by 30 feet with twelve foot posts, complete, with well twenty feet deep, stoned up, building sided, painted, double windows, ceiled inside, etc., cost about $650, the work being paid for as above. The equipment consists of an engine of four-horse power (if considered practicable a larger engine, say eight-horse power, with ten-horse power boiler, can be put in to run a feed mill in connection with the creamery), a double cream tank, power churn, power force pump, power or hand butter worker, scales, test churn, cream carrying cans, and a few smaller utensils, with shafting, pulleys, belting, pipes, etc., all costing about $700. Allowing $150 to buy tubs, salt and incidental expenses, and $200 for building and filling an ice house (24 by 24 with 12 foot posts), makes a total of $1,700. The balance of the stock can be used in starting, also for the purchase of eggs which can be gathered by the cream gatherers, and such other purposes as may need it.

The setting cans will give the most trouble; every agent will insist that his is the only kind which can possibly be used. Right here I may say that we came very near getting "stuck" on an outfit of about $2,300, including cans to the amount of $1,000. Had the manufacturers kept their part of the contract, we should now probably be anxiously looking for a healthy cyclone to carry the whole thing off, but they did not, which gave us a chance to investigate and cut down the figures about two-thirds.

We are now contemplating to make a present of the buildings and ice to a party here if he will contract to equip and start the business at once, also to lend him the rest of the money for one year, at a fair interest, to help start it, believing that one man, if directly interested, will make it more successful, than a number can who are only indirectly concerned.

## POULTRY MANAGEMENT IN DENMARK.

J. PEDERSEN BJERGAARD, DENMARK.

American poultry-breeders have reason to be proud of several new breeds of poultry which they have originated. I would not have it understood that every individual fowl having the name and looks of a good breed is a great layer, but a majority of hens, when of a good strain, will prove the value of their breeding. When the very best only of such extra good layers, fully developed and well-bred, are chosen for breeding stock and, if possible, mated with a high-scoring cock, also of a good laying family, a marked improvement will be noticeable in the first generation. The process continued will bring about wonderful results when the chickens are well managed. Chance may play some part, it being impossible to decide beforehand the strength of inheritable tendency in several mother-birds among which the choice may stand for a starting point; but the method is rational and is well worth practicing. It will always give good results although varying in degree, especially if the breeder resist the temptation to try to breed for two or more objects in one line. Thus, if laying is desired in a higher degree than usual, the eye must be kept sharply directed to this quality in the mother-bird, regard being had not only to the number of eggs laid through the year, but to their average weight, and even their shape and color, and the season of the year when they are principally laid. Good winter layers are of extraordinary value, as the eggs at that season are worth from one to two hundred per cent more than in the spring and summer, which for a fair sized stock of fowls makes a very great difference in the balance sheet.

Last winter in Denmark was one of the longest and most severe of this century. After the first of February, I spent my time at home and personally attended to the most pressing wants—alas! I can't say comforts—of my little stock of choice poultry, and kept strict account of their laying. The quarters of the birds are for various reasons very imperfect—exposed to the cutting eastern winds which prevailed almost through the whole winter, often attended with snow storms. No artificial stimulants, no spices or the like were used. A liberal supply of rationally chosen food, suitable for the season, is all I have provided, aside from kind treatment, to encourage egg-laying. One select breeding pen, consisting of four pullets, laid in the month of February, when wild Boreas roared himself hoarse, ninety-eight eggs, of which two had double yolks and double weight of contents. The pullets had then been laying steadily all through January. On the 7th of March two of the hens became broody. I turned them into another yard with a cock, where there was no nest and fed liberally, giving extra rations of animal food and some chopped green onion tops. On the 18th one of the hens began laying again. At the close of the month, in spite of the broody disturbance, the egg table summed up seventy-six. The other broody hen commenced laying the 4th of April, and the three others laid right along. Another older hen of the same breed has not done so well, but the hens had been laying all summer and through the fall very abundantly. If such productiveness were more common there would hardly be so many questions as to whether poultry keeping will pay.

## PORK AND PORKERS.

Save and cook the small potatoes for the pigs.

The hog doesn't object to a seasoning of curculio in his fruit.

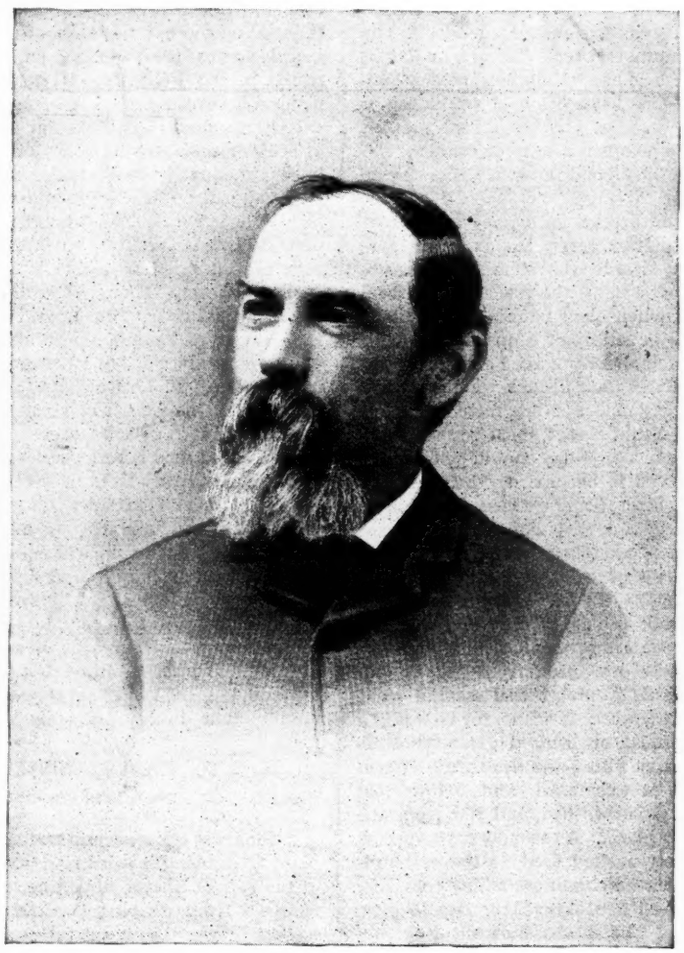
The hog is omnivorous and is much benefited by the right sort of vegetable food.

When the hog gets more variety in his food and less variety in his drink, he will not have the "cholera" so often.

The first point in making cheap pork is to get the hog to market in the shortest possible time. The same food makes more pork in early fall than in midwinter, for less of the food is used to produce animal heat.

## PROF. E. W. HILGARD.

This gentleman, well known to the scientific world and to farmers as the director of the California Experiment Station, was born in Zweibruecken, Rhenish Bavaria, on Jan. 5, 1833, of distinguished parents. The elder Hilgard, becoming dissatisfied with the government, resigned the chief-justiceship of the court of appeals and emigrated to America, settling on a farm near Belleville, Ill., where the subject of this sketch had a thorough schooling in all the details of agriculture, and where he received a superior education from his father. When sixteen years old he went to Europe, and studied at Heidelberg, Zurich, and at the Academy of Mines at Freiberg in Saxony, taking the degree of Doctor of Philosophy at Heidelberg in 1853, at the age of twenty. After two years in Spain and Portugal, he returned to America in 1855, to take charge of the chemical laboratory of the Smithsonian Institution, and lectured on chemistry at the national medical college. In 1858, he was appointed chief geologist to Mississippi, and pushed its geological survey very vigorously, his report thereon being one of the most valuable contributions ever made to the geology and agriculture of this country. In 1860 he made a second trip to Spain and married at Madrid the daughter of Col. Manuel Bello, of the Spanish army. During the war, Prof. Hilgard was mainly assigned to the duty of preserving the collections at the University of Mississippi at Oxford. Continuing also the office work of the survey so far as his connection with the Confederate "nitre-bureau" permitted, he took a prominent part in scientific matters connected with the Confederate army, and at the close of the war resigned as geologist to become professor of chemistry in the Mississippi University. During this period he did much in geological and agricultural research in Louisiana, under government and State auspices, the results of which were duly published. In 1878 he accepted the chair of geology and natural history at the University of Michigan, but the climate proving too severe for his health, he accepted the professorship of agriculture and chemistry at the University of California, and in the spring of 1875 moved with his family to Berkeley, where he has since resided, and where he has done a great and well known work. Professor Hilgard has made a specialty of investigation of soils, and particularly of soil analysis. Contrary to the long-prevailing prejudice against the practical utility of the latter, he has shown that by the accurate observation of soils in their natural condition, combined with their chemical and mechanical analysis, it is practically feasible to predict both their agricultural value and their proper treatment in cultivation. Hence he is a warm advocate of agricultural surveys, properly so called, for the benefit of farmers, who are otherwise reduced to the necessity of long and costly experimenting. For the purpose of mechanical soil analysis, by which the tilling qualities of soils are determined, he has invented a special instrument which seems to overcome the difficulties that previously made such analyses valueless.



PROF. EUGENE W. HILGARD.

One of Prof. Hilgard's greatest works was his report on the cotton production of the United States for the Tenth Census, in which undertaking he was given full latitude. With the aid of the State geologists and other qualified men of the Cotton States, his report embraces not only the results and discussions of the census returns, but also descriptions of the physical and agricultural features of each of the fifteen States concerned. These volumes exemplify the plan according to which he would have the whole country described for the benefit of the agricultural population.

Prof. Hilgard is a member of the National Academy of Sciences and other scientific bodies. He has been a frequent contributor to the scientific and agricultural press. As may be inferred, he is a man of the people as well as of science, and is an indefatigable worker.

## THE HISTORY OF THE CONCORD GRAPE.

PROF. J. L. BUDD, IOWA.

I have read with much interest "The Home and Story of the Concord," in the August number of the AMERICAN AGRICULTURIST, and wish to call attention to what seems to me an important omission. As the story is given by the writer of that article, the Concord is a pure seedling from a "true Labrusca" vine that came up in Mr. Bull's garden from a seed probably dropped by a bird. If the writer will turn to page 66 of *Hovey's Magazine* of 1854, he will find the following statement written by E. W. Bull, viz.: "The seedling from which the Concord was raised, grew near to a Catawba, and it is quite possible was impregnated by it, it having the flavor of that variety." Again, on page 429 of the same volume, C. M. Hovey writes: "In a distant part of his (Mr. Bull's) garden a wild vine had sprung up from some accidental seed thrown into the ground or dropped by the birds, which, though similar to the common wild type in nearly every particular, produced a very sweet grape, ripening the last part of August. This struck him as a favorable commencement, as earliness was the main thing to be gained. He removed it to the trellis near his Catawba and other vines, gave it good cultivation, gathered the crop, and planted the seeds, and it was the produce of these seeds that gave him, most fortunately, the Concord." I copy these notes, written at the time, as the history of horticultural advancement will not favor the belief that the native foxy Labrusca of Massachusetts could be developed into the really excellent Concord, without the aid of foreign pollen. The Catawba and Isabella, growing near the Labrusca parent of the Concord, beyond all reasonable doubt were modified in fruit by *Vitis vinifera* pollen, and I have as little doubt that the Concord was as much modified by the pollen of the Catawba, and possibly the Isabella.

In my opinion, Mr. Bull might have continued to plant seeds of the pure Labrusca to the present day without material improvement in the quality of the fruit, and Mr. Hovey might to this day have continued planting the seeds of our pure native strawberries without producing even an approach to the size and quality of the Hovey Seedling. With a view to future advances we should talk of the possibilities of cross fertilization, but we should not risk too much on the chance of sudden transformations in the size and quality of our native species by selection from pure native seedlings.

Fall sown rye makes feed when the cribs and mows are low and the pastures not yet ready for the cattle.

## KEEPING ONE PIG.

MIDY MORGAN.

To keep one pig is always relatively more costly than to keep two. The remains from a liberally kept household of ten persons would provide an abundance of that kind of food for two growing pigs, granted that they had a convenient run for pasture of the sort of herbage liked by porcines; or, failing that, if some garden trimmings were fed daily in their yard. These varieties of keep will not, however, furnish well streaked bacon, or plump, juicy hams and gammons. The household pig is not a receptacle, as so many unwisely regard him, for the contents of a swill-barrel; neither is his mission that of consuming, and thus turning to profit, the superabundant supplies of the family.

Though the hog is omnivorous, he is naturally a most cleanly feeder. The wild boar subsists on roots, acorns, beech nuts, and such like. His lair is *perfect cleanliness*. Even in the bondage of domestication, only under the severest pressure will a hog soil his bed. Therefore is it that with domestication and the perversion of its natural habits, a long train of evils has ensued; disease is rife because the hogs of our land are improperly fed. To such an extent is this carried that the flesh of the hog has widely become contaminated and deadly as food. The fearful condition of trichinosis is only too frequent. Hog cholera depletes our herds, and measles which causes tape worm in human beings is also to be found.

The source of disease is improper conditions of life. From ranging the woods and working for a living as did and still does the wild boar, his unfortunate civilized brother is penned in narrow quarters, is fed on fat-producing matter, rarely has exercise, more rarely still can his over-stuffed and disordered system find means to deplete itself; an unhealthy voracity takes the place of healthful appetite; sour swill is swallowed when clear running water is required; uncooked grain, which is generally of a quality unsalable for other uses, is fed; and a stomach already gorged and sorely distressed rebels, and farmers complain of their ill-luck when they had better bemoan their ignorant, careless modes of hog fattening.

In the family two receptacles should be set apart for the food-supply intended for pigs. The one in use to-day should be emptied, washed out, and, if of wood, allowed to become dry before being again used; if of galvanized iron, after being washed, it should be thoroughly dried out. All raw vegetable and fruit parings should be fed from the ground and given separately or with fresh garden trimmings, such as the coarse leaves of cabbage, cauliflower, and broccoli, the tops of turnips and carrots, the leaves of beets, and the culls of these roots. These warmed, so long as they last, will provide an abundant and satisfying morning meal, whilst pigs are growing; a range at pasture, where protection from heat is provided will next be in order. Towards evening a full meal of what has collected for the day should be given; if scant, for two pigs a double handful of scalded corn meal or bruised grain, such as wheat, oats, barley or rye, will be most filling and healthful. When the supply of garden trimmings is exhausted, and before cold weather sets in, a few cull potatoes, unwashed, and fed from the ground will economically take their place. As soon as frost appears to be felt, pigs should have entirely cooked food, as the system is overtaxed when it has to first warm and then assimilate cold, raw food. Never on the other hand feed a smoking, hot mess to pigs; their stomachs revolt from such. The drinks most healthy are, fresh water warmed by the rays of the sun; skimmed milk, not in over supply but in moderation, and fed at nightfall when long hours of rest are at hand for digestion; beef broth from corned beef. Never feed bacon or ham broth, as they are fruitful of disease. A little salt is needed and an occasional small dose of mixed peppers can be given with much advantage.

In regard to housing pigs, sanitary rules demand full exposure to the sun with roofing and walls for protection. A small resting place, ten feet square, well built with double plank walls, lined with tar paper and floored with brick, having a plank roof covered with felt, then an air space with a shingle outside covering and lateral ventilators along the ridge, could be put up by farm hands at little cost. The eaves of this pen should project all around; one foot back and sides and two feet in front. The entrance needs no closing except in extremely cold weather, and when such is due to arrive, under wise management the family pig has assumed the form of hams and bacon. The yard of this pen should be commodious, be perfectly drained, and be swept up once daily. The hog products manufactured under the foregoing rules would be savory and of the best, unlike the rank, greasy nastiness now generally prevalent. Given the conditions of judicious feeding and clean, comfortable quarters, the pig still needs his bath. To retain a healthy state of the skin the pig must wallow or be scrubbed; therefore, those who are ambitious of keeping pigs must remember this. If the reader will examine he will find in the forelegs of pigs, small air passages under the knee joints and on the inner sides. When these passages become obstructed the pig sickens and cannot recover unless they are freed.

## PRESERVING THE VITALITY OF SEED CORN.

After seed corn is dried clear through to the center of the cob, care is still required in keeping it until ready for use. Many leave it hanging in a dry place in which it was cured, which is unobjectionable if always protected from dampness, frost and vermin—the great requisites in keeping the seed properly after it is cured. Corn in traces may well be stripped of its husks and dried on a floor before packing away, to be sure all moisture in the butts is dried out. A well dried ear will snap like a dry stick when broken. If it is perfectly dry, many good farmers prefer to leave the seed on the ear until about ready to plant, believing that this guards against the sweating process which it passes through when stored in any quantity. If the ears are packed in barrels, avoid using salt barrels.

Others prefer shelling and sacking (sacks are not so retentive of heat or moisture as boxes or barrels), small bags not over one bushel in capacity being better than larger ones. Careful shelling by hand, rather than by machine, so as not to crack the grains or injure the germ, is a good practice. This shelling may not be done until midwinter or later, but many advocate doing it as soon as the corn is well dried, to secure it against dampness caused by warm spells in winter. Too much care cannot be taken to keep the cured seeds dry and away from frost. N. M. Luiton stores it in the cellar in boxes or sacks on supports nailed to the joists of the first floor, where it is always dry and warm, especially if there is a furnace in the cellar. E. J. Heat puts the seed in slatted boxes hung under the joists of the second story of his workshop, the lower story having a fire in it in cold weather. That frost will not injure the germ of well cured seed is believed by some, but the most careful growers keep the seed away from frost the year around.

Farmers who carefully follow the above method with seed corn will not have to replant, even in unfavorable seasons. From 95 to 99 per cent of such seed will germinate in practice. This last statement is based on long experience by many careful observers; it is not theory. It is poor vitality, not cold or wet, that causes so much seed corn to rot in the ground. John Gould proved this by germinating one hundred per cent of good seed in mud at a temperature of forty-five degrees, although it took twenty days. Above all, such seed will steadily improve the yield and ripen the crop within ninety to one hundred days in average seasons.

## TO PREVENT WINTER KILLING OF WHEAT.

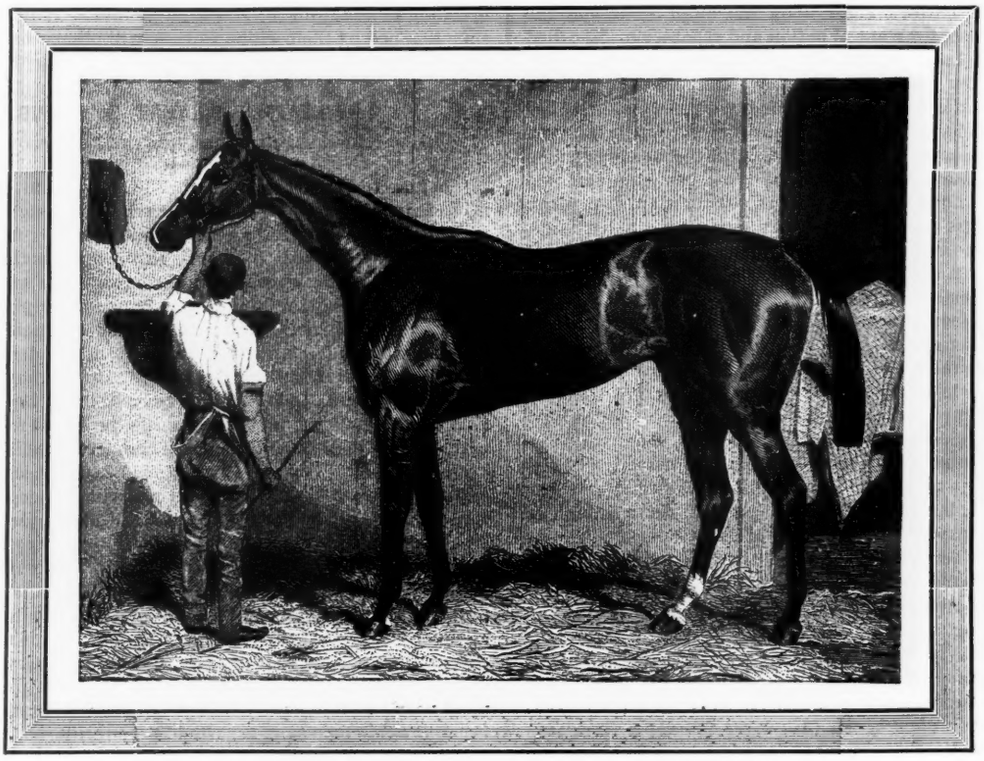
D. S. CURTISS, DISTRICT OF COLUMBIA.

The most effective and beneficial mode of preventing the wheat plant from being injured or destroyed by the freezing and heaving of the soil, is liberal mulching, top dressing with fine manure or compost from the barn yard, or slaked peat from the muck pile, to be evenly spread over the fall-sowed wheat field. In autumn, when the ground is sufficiently frozen to bear the wagon wheels, spread just thick enough to have the ground lightly covered, so that when the soil freezes, cracks and heaves, the wheat roots will be covered, protected and not torn out, but the mulch or compost will fall into the cracks and cover the roots, sheltering them from the effects of weather. We have several times seen fields which were liable to this freezing and heaving, with wheat drilled in, portions of which were top-dressed in autumn as above directed, and on which a full crop of good plump grain was secured, while on the portion of the fields not mulched, in every instance the crop of wheat was a total failure, not showing straw or grain enough to be worth harvesting. In fact, the grain obtained from the top-dressed portions of the fields, much more than paid the cost of the operation; besides the incidental benefits of this light mulching as a surface manure, it was a protection to the soil from scorching sun rays of summer and sheltered the young grass when the grain was cut off. In fact, liberal, frequent, careful top-dressing of fall sown grains as well as meadows is one of the most profitable and reasonable methods for preserving fertility of soils and protecting winter grains and grasses that farmers can practice, and will be found always profitable.

## WEST AUSTRALIAN AND HIS DESCENDANTS.

The descendants of imported Australian constitute one of the most distinguished families of American thoroughbred horses, and the history of the family back to its remote ancestry illustrates the value of pedigree and careful breeding. West Australian, of which our illustration is an accurate portrait after a painting from life by Harry Hall, was pronounced in his day "one of the finest specimens of the English thoroughbred ever seen." He was fifteen hands, three and a half inches high, with a clean blood-like head, a rather short but elegant neck, good shoulders, great depth of chest, a strong back, and was ribbed up to the very hips. With perfect quarters, plenty of bone, and clean legs, he was the ideal of a running horse. His color was a bright golden bay, with a white blaze in the face, and some white on one fore and one hind foot. His record on the turf fully justified his breeding and form. In a single year—1853—he won the Derby, the Thousand Guineas and the St. Leger, carrying off the three highest honors of the year. His sire, Melbourne, and his dam's sire, Touchstone, were both eminent among the best horses of their time.

Australian, the greatest son of West Australian, was foaled in 1858, was named Millington, and imported to this country as a yearling, by A. Keene Richards, of Kentucky. After a brief but very successful career on the turf, Millington was purchased in 1861 by R. A. Alexander, who changed the name to Australian, and from that time until his death in 1879 the horse remained at Woodburn farm. During a large part of that time his stable mates were Lexington, Planet and Asteroid, the whole being the most illustrous quartette of thoroughbred horses ever known in the same stud in America. In form, color, and general characteristics Australian closely resembled his distinguished sire, and impressed them in a remarkable degree upon his progeny. Of his immediate descendants more than fifty became distinguished as racers, or the sires of racers, and five of them ran four miles in less than 7.35. Two of his colts, Wildidle and Mate, were from dams by Lexington, but they were not the greatest of Australian's sons; Helmbold, Fellowcraft, Abd-el-kader, Abd-el-koree, Joe Daniels, Lizzie Lewis, Rutherford, Spendthrift, Springbok and Silent Friend, of Australian's get are names which will always have a high place in the history of American thoroughbreds. The *Turf, Field and Farm* justly remarked at the time of his death: "Australian has sired more real good race horses of both sexes than almost any other horse in America, either native or imported. In point of merit, he has been near the head of the list for several successive years. One thing is beyond question, that he has sired more horses that have run four miles in less than 7.35 than any other stallion that ever lived."



THE FAMOUS PRIZE WINNER "WEST AUSTRALIAN."

## HOW TO CARE FOR FISH WHEN CAUGHT.

SETH GREEN.

I wish to say a few words to the readers of the AMERICAN AGRICULTURIST, especially those who go out for a day's fishing, concerning the care of the fish after they are caught. The prevalent method is to string them through the mouth and gills and suspend them in the water over the side of the boat or pier. The supposition on the part of the fishers is that by so doing the life of the fish will be prolonged and the flesh kept in a more palatable condition. This is wrong, and I can conceive of no worse method or quicker way of spoiling the fish. I have on many occasions seen them thus suspended where the sun struck them, and in a few hours they became actually unfitted for food.

My method of taking care of the fish until I reach home or camp is to kill the fish as soon as caught by giving them a sharp rap across the back of the neck, and then place them in a covered basket containing a quantity of fresh green leaves or grass, or, if I am fishing from a boat, I have a quantity in the bow where no water is likely to settle. They are kept covered and well protected from the heat of the sun. I aim to keep them out of the water after they are caught, and draw them as soon as possible. After they are drawn, if it is desired to keep them on ice a few days, or ship them to friends, do not wash them but scrape all the inwards and blood out as clean as possible and wipe them off with a dry cloth. Fish thus treated will be found to keep better than by washing in water. I remember on one occasion, when away on a fishing trip, of presenting my day's catch to the lady of the house with whom I was stopping. On arising next morning, chancing to be in the neighborhood of the kitchen, I discovered my speckled beauties in a pan of rain water where they had been placed the night before to keep them fresh for breakfast. To say that they looked unattractive is not expressing half, and I can assure you that I did not make my breakfast on trout. On questioning my friend I learned that this was the usual way of preserving the fish, and I dare say this plan is followed by many others.

From a common-sense point of view, there would be just as much reason in hanging a beefsteak or dressed poultry in water to keep it in good edible condition as to place the fish in it for that purpose. I desire to impress the importance of the above fact on the minds of my readers as thoroughly as possible.

## BAD AND GOOD HORSE-SHOEING.

GEORGE A. MARTIN.

Horses suffer in many ways from ignorance, incompetence and carelessness in the matter of shoeing. No one is fit to shoe a horse unless he has some intelligent idea of the anatomy and physiology of the horse's foot. It is a complicated structure of bones, tendons, cartilage, muscles, nerves and blood vessels, encased in a horny mass of hoof and sole, which is as constantly growing as are the nails upon human fingers and toes. In a state of nature, when the horse runs wild and free upon the grassy plains, this growth supplies the loss caused by constant wear, and the foot is kept sound and healthy. But when the horse is held in captivity and worked upon hard roads and flinty pavements, the hoofs require the artificial protection of shoes. In applying these, the natural conditions should be preserved as far as is compatible with proper protection. The more common errors in reference to the horse's foot are using too heavy or improperly shaped shoes, burning the hoofs to make them fit the shoe, careless use of nails, rasping the outside of the hoof, and, worst of all, leaving the shoes on too long without resetting. A thick, massive shoe which lifts the frog and sole wholly from the ground, is a prolific source of corns and other evils. It throws the entire weight upon the outer shell, and the frog becomes shrunken for want of action and reparation. So-called corns in horses' feet have no analogy with those which afflict the human family. They consist of a spongy, fungoid substance in place of healthy, elastic horn, between the outer crusts and the bar of the foot. There is no external manifestation of a corn, even after the shoe which caused it is removed, until the inside quarters of the foot are pared away, when the horn will be found soft and spongy. In very bad and neglected cases, suppuration is present. The usual treatment is to cut out the corn, and apply a bar shoe, for the reason, as given by an eminent veterinary authority, that "the jar on the frog, communicated through the shoe from the ground, induces a healthy action of the foot, and the sole has a greater tendency to secrete healthy horn." But why communicate this natural jar "through the shoe" instead of shoeing in a manner to preserve the natural action of the foot? The true remedy as well as preventive is to apply a shoe with a heel so low that the frog will strike full upon the ground. This promotes a healthy, natural action of the entire foot. The Charlier shoe, which is merely a steel rim fitted into a groove cut in the outer edge of the hoof, is theoretically a perfect shoe, as it allows the frog and sole to strike the ground, but in practice it is scarcely strong enough to stand the impact of pavements. A shoe of the Goodenough style seems to be about the nearest correct of any, and it is used exclusively for the horses of many street railway companies.

The shoe should always be fitted to the hoof, not the hoof to the shoe by burning. For such carelessness as "pucking," by driving a nail into the sensitive foot, there is no excuse. The outer wall of the hoof is close and compact in texture, and is designed as a protection for the softer lamina. It should never be rasped away, as is often done after a shoe is set. However perfect a shoe may be in its pattern or setting, it should never be allowed to remain on the foot more than three or four weeks. The growth of horn continues alike with a shod as an unshod hoof, and in the former there is no wear to keep it down. The shoe must therefore be removed, superfluous growth pared away, and the shoe reset. Otherwise contracted heels, corns, navicular disease and a host of other evils so common among horses are likely to ensue.

## DISEASES OF YOUNG FOWLS—PREVENTION AND CURE.

MISS H. M. WILLIAMS, NEW JERSEY.

Leg weakness and diarrhea are the most troublesome ailments prevalent among young chicks, and may arise from various causes. Leg weakness usually attacks the cockerels of a flock first, and generally when they are between two and three weeks old. When recovering from an attack of it, they look as if they were walking on stilts, especially if it is caused by too rapid growth. At its first appearance, those afflicted should be removed to a pen by themselves, particular attention being given to the warmth of the brooder and dryness of the scratching pen, and an additional quantity of bone meal should be given in their soft feed. The Douglass mixture should be kept before them regularly. Should the disability take the form of rheumatism, which is apparent from swollen joints at the hock, a daily anointing of these with coal oil is effective. This, of course, would not be practicable with a flock two weeks old, but it has been tried with chickens six weeks old with marked benefit. An excess of heat will only increase the trouble. If they preserve a healthy appearance otherwise, no anxiety need be felt.

Diarrhea may arise from two causes, chill and injudicious feeding. If from the former, the chickens usually die within twenty-four hours. The greatest care should be observed in feeding, for the amount of food which must be given in order to produce rapid-growing chicks would naturally tend to give them indigestion, hence diarrhea, or constipation.

Constipation is quite as dangerous as diarrhea, as it frequently causes rupture of the intestines. I have seen them protrude nearly an inch. They can be replaced by a gentle pressure of the hand, and the parts should be well bathed afterward with warm water. A teaspoonful of castor oil rubbed into the yolk (only) of a hard boiled egg may be given to the brood and will afford relief in a few hours. The temperature of the brooder should be carefully observed, especially if lamps are used, for the outside atmosphere greatly affects that of a brooder house not heated by steam. One can readily ascertain the proper heat of the brooder by a touch of the hand, and observing whether the chicks crowd in the center, or settle comfortably around the edges. Seventy-five chicks will do much better in the usual space allotted to one hundred, in most brooding houses, and the strongest should be removed from time to time to a pen by themselves, as they will otherwise invariably overpower the weak.

## PINEAPPLE CULTURE IN FLORIDA.

THOMAS E. RICHARDS, INDIAN RIVER, FLORIDA.

I came to Florida in the fall of 1879, with impaired health and no definite ideas as to what business I should engage in. I settled on the banks of the Indian River, and found it free from malaria and frosts. I decided to embark in pineapples, though I had it all to learn, and no books or papers threw any light upon the business. I knew nothing of the kind of soil required for pineapples or what culture they required. But upon the advice of neighbors I obtained forty thousand plants, at ten dollars per thousand, and set them out. They looked well for some four months, when they began to die in the heart or bud. Nothing could save them; they all died out. I abandoned that land, and came across the Sound and planted a few plants in my present situation, and they grew well. Finally I found out why the first ones died, which was my first lesson in pineapple culture. The fact is, the pineapple will not grow in shell land. Raw shell, either fine or coarse, will kill pineapple plants. In 1881 I put out a good patch of pineapple plants; they grew well and I kept at it, and have every year increased the number until now I have some 250,000 under culture. With the same amount of labor as is put into orange culture there is more to be realized, for pineapples bring returns so much sooner. We set 16,000 per acre, at a cost of $160 for plants. They can be bought for less, but that is the price of the best; and the second year from planting they will yield nearly as much per acre as a ten-year old orange grove. There is not as much land as is reported in South Florida that can produce them without protection, but it would pay to protect them. Where there is no danger from heavy freezing a very slight covering will keep off frost.

I am sure there will never be an over-production of this fruit. I have made wine from the fruit which proved excellent and had a fine bouquet. I also make cider from it; the acid of the pine is one of the best for the stomach. Vinegar is also made from the juice which discounts northern cider vinegar. I think a good article of brandy could be made from pineapples as there is a great amount of saccharine matter in them. They are also canned, so that all can be used. Pineapple growing will be the chief industry in this part of the State in the near future. I have a few new varieties of pineapples, some being much better than the standard sorts. The Egyptian Queen is a better fruit for most purposes, but it is not good canned. The large pines, such as Trinidad, are shy bearers and a rather coarse fruit, but they are very handsome and bring a good price, from a dollar to a dollar and a half per apple.

**The Ohio Way with Seed Corn.**—Select seed corn from the field in the month of October, not later; earlier will do if the corn was planted early. Husk it clean and place the ears in a well-ventilated crib or barn to dry out. Do not pile up the ears while they are drying out. Seed corn selected in this manner will grow without any failure. This is a fixed rule with our best corn farmers.

W. H. WILSON, Ohio.

## MUTUAL INSURANCE AMONG FARMERS.

### Can Farmers Safely Engage in Co-operative Fire Insurance?

FIRST PAPER.

No farmer can afford to assume for himself the risk of losing by fire not only his buildings but their contents. The risk may be a small one, or the chances of fire may be far more numerous than the farmer imagines. It is at best a great uncertainty. Indeed, one of the largest of the Eastern stock insurance companies testifies that there is far more risk on farm than on village or city property. If a farm house or barn catches afire, it is almost certain to be a total loss, whereas a fire in a city equipped with a fire department is on the average likely to be put out without a total loss. The chances of fires on farms seem to be greater now than formerly. For instance, the company above quoted has kindly shown us its book of profits on different classes of insurance, from which it appears that up to 1872 it made a handsome profit on farm insurance, but this profit steadily fell off, until about 1880, when the losses on farm insurance exceeded the premiums received, and this has gone on until in 1887 the company's net loss on farm business was even larger than its profit on this class of risks had been in 1872, yet the profits from its city and village insurance are now four times as great as they were sixteen years ago. On the other hand, many stock companies must make a large profit on farm insurance or they would not be so anxious to secure it.

#### HOW SHALL THE FARMER INSURE?

The farmer must insure, but how? He should make certain, in the first place, that he insures only in reliable companies. The necessity of this precaution is greater in the newer portions of the West than in the Eastern States. In Kansas, for example, traveling agents have "worked" whole counties. Going from house to house, they "wrote" insurance at what they claimed were low rates, took the farmer's fee and his note and departed. In some cases they represented companies legitimately organized, but which promptly "failed" after reaping a rich harvest; in other cases, it was entirely a wild-cat scheme, the gorgeously printed policy representing only a fictitious company.

Insure with a local resident agent in whom you have confidence. He will be the first to learn if a company is weak and will transfer you to a strong corporation. Such a man, the licensed agent of the insurance companies, can tell you just what to do in case you have a fire loss. If you are insuring to a considerable amount, divide it among several companies. If you want to know all about the various companies, write to the State Insurance Commissioner at your State capital, and he will send you his report, which usually gives just the information you want. If you have any trouble in collecting insurance in case of honest loss, write to the Commissioner of Insurance. "You have paid the premium, the company must pay the loss—or get out of Kansas," as one Commissioner tersely puts it.

#### THE COST OF INSURANCE.

Having decided to insure and having made up your mind to deal with a local representative of a company that you believe will pay its losses, the question of cost comes up. Now it is true both that the best is the cheapest and that we desire to get the most and best insurance for the least money possible. We are willing to pay for the insurance that is best in every way, but we don't want to pay any more for it than is necessary.

Ordinary fire insurance in the old line stock companies costs too much. Such companies in the United States and Canada receive in the aggregate about $100,000,000 annually for the insurance they carry. The average aggregate losses paid by them during the past six years have been only a little over one-half of that sum. To be exact, for every $100 received by these companies for premiums or fees for carrying insurance, they have paid for losses on the average for the past six years $53.30. This has left a balance of $46.70 out of every $100 paid to the companies for profits and to defray the cost of conducting the business. This statement is exclusive of the business done by the great majority of mutuals and co-operative insurance companies among farmers. Beyond question the system is wrong which compels the public to pay just about twice what insurance actually costs. Forty-seven per cent is an exorbitant charge for the expenses and profits of insurance. Of this, fully ten per cent is the average present return on the capital invested (in former years the profits have averaged from eleven to as high as fifteen per cent); at least fifteen per cent goes for local agents' commissions, and the remaining twenty per cent pays the salaries, rents and other expenses of the business as now conducted. This is too much for the public, and especially for farmers, to pay.

We are not alone in this position. The Insurance Commissioners of several States have repeatedly urged the same thing. Particularly is this true of the Massachusetts insurance reports. As Superintendent Tarbox said in his report for 1885: "The too great cost of insurance challenges the attention of a frugal public. We pay too much for insurance protection. Plainly, it should not—as for a quarter of a century it has—cost the people of this country a hundred million dollars and more to protect themselves by insurance against sixty million dollars' loss of property by fire."

While on the average, forty-seven per cent of the money paid the old line companies goes into profits and expenses, in some States and in some years the proportion of profit is much larger, and again it may be much smaller. Occasionally the losses in a State exceed the premiums paid therein in the same year. And during the past year or two some companies have made small profits owing to the extraordinary fire losses. But the general statement is incontestable that insurance costs altogether too much. This fact is recognized by the companies themselves, and some concerted action toward reducing these expenses is now suggested. A reduction is proposed by cutting down the local agents' commission to that paid for the five years ended with 1865, when it averaged 9½ per cent of the premium in place of the 17⅓ per cent as the average paid for the five years ended with 1887.

#### FARM MUTUAL INSURANCE COMPANIES.

The exorbitant cost of insurance has led farmers in some States to organize co-operative or mutual companies in which to insure themselves. Pennsylvania was the first State to adopt this plan, and some of her farm mutuals are more than half a century old. Michigan has had a good system of farm mutuals in operation for twenty-five years, and Minnesota, Wisconsin, Iowa, Illinois and Ohio have since adopted it or something similar. The practice is quite extensive also in New York, New Jersey and Maine, but in most other States it is comparatively unknown. In not a few States it is unlawful to practice such business.* Some of the communit sects, like the Shakers and the Mennonites, have insured themselves for years. Indeed, the various Mennonite mutuals in this country seem to have sprung from the Tiegenhoff Fire Insurance Association in Prussia, which originated in 1623, and has been in continuous existence ever since.

The general principle of all these farm mutuals is to insure the property of members for stated periods, exacting a small fee only in advance for the simple expenses of printing, Secretary's services, and cost of examining risks. Whenever a loss occurs, an assessment to pay it is levied pro rata among the insured. Thus the patrons of these farm mutuals pay only the actual losses by fire, plus a moderate sum for actual expenses. Insurance companies on this general plan have proved remarkably successful, greatly reducing the cost of insurance to their patrons in the States named, as will appear from the following facts and experiences: It is believed that the average rate charged in 1887 for insurance on farm property, including both houses and barns, was at least 1¼ per cent, or $12.50 per $1,000 for five years (equal to $2.50 per year on each $1,000 of insurance), in the States west of Pennsylvania and New York. In the Eastern States, the average farm rate is assumed to be 1 per cent, or $10 per $1,000 insurance for five years (equal to $2 per year on each $1,000 of insurance), except that in Maine it is 1¼ to 1½ per cent. Of course, higher and lower rates are obtained, but the following estimate errs, if anything, in being too low:

#### AVERAGE COST FOR EACH $1,000 INSURANCE IN 1887.

NOTE.—The average of the farm mutuals has been compiled with great care from the insurance reports of the respective States, supplemented,

*NOTE.—In Texas, for instance, some mutuals organized to insure ginhouses have been closed up by the Attorney-General, although the Patrons of Husbandry of that State have a small company with $135,000 of insurance. In Missouri, a mutual can do business only when it has a guarantee fund of $50,000, or with premium notes for $100,000 with thirty per cent thereof paid in cash. Louisiana law prohibits anything like co-operative fire insurance. Dakota requires a capital of $100,000. Utah has no farm mutuals, though the Mormons have a system of mutual insurance. Anything like farm mutuals is comparatively unknown in North Carolina, Virginia, West Virginia, Tennessee, Rhode Island, Colorado, Alabama, Florida, Georgia, Indiana, Idaho, Indian Territory, Kentucky, Kansas, Maryland, Mississippi, Montana, Nevada, New Mexico, Oregon, Washington and Wyoming. New Hampshire had a grange fire insurance company some years ago and has just revived it. Vermont has a similar company, but it is not patronized as it should be. The Massachusetts grange has one company covering the whole State, and so has Connecticut, the law of both States requiring $500,000 of applications before a company can issue policies; these two companies are starting very auspiciously. Nebraska has only one co-operative farm company, and the State laws do not encourage such.

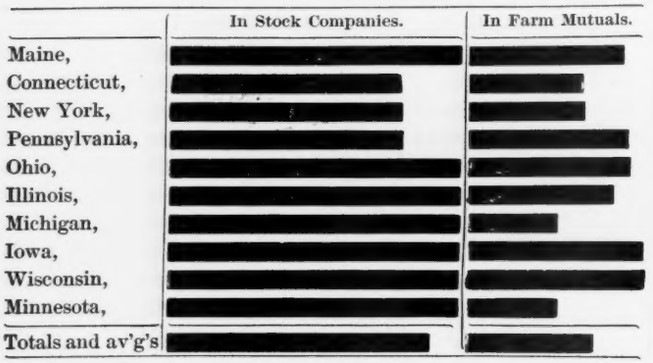
where necessary, by additional data collected from the secretaries of companies of this character, to whose painstaking reports is due much of the value of this article as an exposition of the whole subject of co-operative insurance among farmers. The total earnings show the amount saved on the insurance carried by the mutuals; thus a gain of $1.01 per $1,000 of insurance, saved $10,990 on the $10,882,000 of insurance in the twenty-nine Maine mutuals.

| No. of Mutuals | Cost for $1,000 Insurance in 1887. | In Stock Companies | In Farm Mutuals | Saving in Mutuals per $1,000 annually | Total Savings in Farm Mutuals annually | Amount at Risk in Farm Mutuals |
|---|---|---|---|---|---|---|
| 29 | Maine | $2.50 | $1.49 | $1.01 | $10,990 | $10,882,000 |
| 8 | Connecticut | 2.00 | 1.20 | 0.80 | 5,984 | 6,373,306 |
| 77 | New York | 2.00 | 1.23 | 0.77 | 67,314 | 87,422,468 |
| 195 | *Pennsylvania | 2.00 | 1.50 | 0.50 | 525,000 | 105,000,000 |
| 91 | †Ohio | 2.50 | 1.47 | 1.03 | 72,732 | 70,614,626 |
| 160 | Illinois | 2.50 | 1.56 | 0.94 | 57,675 | 61,357,755 |
| 72 | Michigan | 2.50 | 0.88 | 1.62 | 252,722 | 156,001,365 |
| 101 | Iowa | 2.50 | 1.68 | 0.82 | 39,769 | 45,258,000 |
| 152 | Wisconsin | 2.50 | 1.78 | 0.72 | 62,296 | 89,299,705 |
| 55 | Minnesota | 2.50 | 0.92 | 1.58 | 21,567 | 13,650,496 |
| 940 | Totals and averages | 2.35 | 1.37 | .98 | 1,116,049 | 645,859,721 |

*Of the 195 Pennsylvania mutuals, many insure other than farm property; the estimate is based on the experience of twenty farm mutuals fairly selected. At least one-fourth of the $420,000,000 of Pennsylvania mutual insurance is believed to be exclusively on farm property.

†The average excludes city, live stock and plate glass mutuals.

COST PER $1000 OF INSURANCE IN 1887, GRAPHICALLY PRESENTED.




The above tables make a flattering showing for farm mutuals for a single year, indicating a saving by 940 co-operative companies in ten States of over one million dollars annually. But what are the facts in a long period? We will cite from two States whose records are quite complete:

MICHIGAN FARM MUTUALS.

| | 1865. | 1875. | 1880. | 1887. |
|---|---|---|---|---|
| Number of companies | 24 | 38 | 51 | 72 |
| Number of members | 16,585 | 47,254 | 76,016 | 92,877 |
| Risks in force | $27,745,779 | $92,204,349 | $129,812,108 | $156,001,365 |
| Assessments levied | $27,480 | 157,917 | 209,833 | 149,651 |
| Losses paid | $20,345 | 126,783 | 188,652 | 247,482 |

ILLINOIS DISTRICT, COUNTY AND TOWNSHIP MUTUALS.

| Year. | Number of Companies. | Risks written during the year. | Risks in force Dec. 31. | EXPENDITURES. For losses. | EXPENDITURES. Total. | PER CENT. Of losses to risks in force Dec. 31 | PER CENT. Of expenditur's to risks in force Dec. 31 |
|---|---|---|---|---|---|---|---|
| 1873 | 30 | $3,497,996 | $8,891,632 | 15,930 | 22,526 | 0.18 | 0.25 |
| 1874 | 56 | 4,284,480 | 11,199,307 | 17,189 | 25,027 | .15 | .22 |
| 1875 | 86 | 5,442,928 | 14,960,716 | 11,274 | 19,521 | .08 | .13 |
| 1876 | 104 | 5,145,123 | 19,603,221 | 15,780 | 24,075 | .08 | .12 |
| 1877 | 117 | 5,675,558 | 23,505,189 | 20,239 | 30,649 | .09 | .13 |
| 1878 | 127 | 6,685,415 | 26,649,653 | 22,212 | 32,419 | .08 | .12 |
| 1879 | 128 | 8,415,296 | 29,184,582 | 30,296 | 42,983 | .10 | .15 |
| 1880 | 134 | 9,177,095 | 32,764,232 | 19,859 | 35,855 | .06 | .11 |
| 1881 | 138 | 9,200,531 | 37,992,262 | 42,388 | 63,009 | .11 | .17 |
| 1882 | 143 | 10,347,284 | 41,840,969 | 27,789 | 44,010 | .07 | .11 |
| 1883 | 145 | 12,547,722 | 45,978,815 | 37,434 | 57,179 | .08 | .12 |
| 1884 | 147 | 12,663,593 | 50,597,468 | 45,876 | 67,011 | .09 | .13 |
| 1885 | 150 | 12,611,231 | 53,706,455 | 48,206 | 69,916 | .07 | .09 |
| 1886 | 153 | 12,658,398 | 57,346,771 | 66,121 | 92,722 | .12 | .16 |
| 1887 | 160 | 14,277,158 | 61,357,755 | 68,130 | 95,666 | .11 | .16 |
| Totals, | | $132,629,802 | $515,578,997 | $488,730 | $723,475 | .09 | .14 |

The expenditures, other than losses, have been 32 per cent of the total paid out. In stock companies, from forty to sixty per cent of the receipts go for expenses other than losses, averaging 46 per cent.

THE SAVINGS MADE BY THE MUTUALS.

The average cost for insurance in the Michigan mutuals for twenty-eight years has been less than $1.50 per $1,000 of insurance per annum; in the Illinois mutuals, $1.40 per year for fifteen years. This is a saving of from thirty to sixty per cent or more over the rates of stock companies during the same period, which formerly were much higher than at present on farm property. At a low estimate the farm mutuals have saved their patrons:

| | |
|---|---|
| In Michigan, in twenty-eight years | $3,500,000 |
| In Illinois, in fifteen years | 775,000 |
| Total savings in two States | $4,275,000 |

In other words, to have insured their property in the old-line companies to an equal amount for this period would have cost the patrons of farm mutuals in these two States over four and a quarter millions of dollars more than they have had to pay. If all farms insured in these two States had been carried in farm mutuals, the savings would have been very much larger. The average savings of nearly 1,000 of these mutuals, so graphically given above, are still more suggestive. But there is another side to the system, and lessons of costly experience, to be told in our second article.

## HOW TO SECURE CHEAP ENSILAGE.

JOHN GOULD, OHIO.

One of the questions that now seems uppermost in solution of the silage problem is that of cheap and yet effective silos. The farmer of ordinary means is asking for a structure that will be inexpensive, easily built, and still perform its office; it seems that the stone silo has fulfilled its mission, and cellar silos and massive structures must be relegated to the past. The silo is now asked to give fairly uniform results in the proper preservation of the silage. As the matter is more and more inquired into, the evidence is rapidly accumulating that the crop should be thinly planted, and induced to develop the grain-bearing habit, and allowed to grow until sufficiently mature before putting into the silo. This plan has now by universal consent been conceded as the best way, and the same line of investigation is fast demonstrating that the development of heat in the silage to one hundred and twenty-five degrees or slightly above is the best way yet practiced for making uniformly good silage, or the ripened article with its only fractional trace of acid.

To secure uniformity it is found that the stone silo presents obstacles that prevent perfect attainment of this desired result. Stone is a good conductor of heat and frost, and this prevents good, or perfect "cooking" of the silage along the walls and corners, and the condition of the silage is found to be far from uniform. While there are exceptions to this rule, it does not invalidate the now generally accepted idea, a slow filling, and a more uniform result attained with the wooden silo. This is in full accord with the progress of silage in this country, that all important discovery has been to simplify the system, decrease the cost, make better silage and better meet the wants of the average farmer. To this end, the silo made of two thicknesses of inch boards, with tarred paper between, nailed on to two by ten inch studding, set sixteen inches apart from centers, gives the best results. That the silo should have a good roof is obvious. That it needs any floor except the soil, well beaten down, is not proven. That it would look better if covered on the outside of the studding, is about all the argument on that score, and this affords all the "air space" needed for the exclusion of frost, is equally true. Now and then in extreme weather there may be a slight freezing of the silage along the wall, between "wind and water," but that it injures the small amount of silage affected is not apparent, and whether this should justify any considerably increased expense in silo building to guard against a temporary and infrequent inroad of Jack Frost, is a matter left to each one to decide for himself, rather than an imperative rule for all. If the superstructure could be closed after taking out the silage, especially in severe weather, so to harbor all the escaped heat of the silage, it is to be doubted if silage on the surface would ever be less congealed, or frosty along the walls.

That the silo needs the additional expense of a partition, or divisions, is now questioned. The silage can be deposited alternately at each end of the silo and the required heat obtained; and the other important fact is that "cooked" silage can be left exposed for a long time without injury, so that if the feeding is uniform from the whole surface of a silo there will be no injury to the feeding quality of the silage. This is no less important than the other economy that silage needs no other cover than greenish hay, spread evenly over the surface to the depth of eighteen inches, after the silage has attained a warmth of one hundred and thirty degrees. A few old planks or slabs thrown on will hold the hay in place.

The small farmer can dispense with the cutting of the fodder in the pits by filling with whole fodder, and in quality of silage obtain as good results as though an expensive cutter was employed. It is put in and removed from the silo with greater facility if the fodder is tied in bundles loosely, and then put in regular order, tops and butts. The silage is kept level by laying occasionally bundles of fodder lengthwise of and close up to the walls, crossing the tops in the corners, not the butts. Each four or five feet filling should be allowed to settle and heat, and then the filling resumed.

## CLIMATIC INFLUENCES UPON VEGETABLES.

C. L. ALLEN.

The variation of plants through climatic influences is more marked than is generally supposed. In fact, climatic influences have more to do in changing the character of vegetable forms and properties than all other causes combined. No more striking instance of this need be noted than was shown in the production of the Belgian carrot. This affords a most valuable and conclusive illustration, as it is one of the very few recorded instances where, by systematic effort, a wild plant has been so improved by cultivation and selection that from a worthless state it has developed into a vegetable, valuable either as a garden or field crop. The Belgian carrot is derived from *Daucus Carota*, the wild carrot, with small, dry, sticky roots of exceedingly high flavor. The history of its transformation is quite interesting and valuable, because the knowledge gained may assist in the development of other forms.

The most distinguished naturalists of all countries have been industriously at work, during the past three hundred years, in experimenting with almost all known genera of plants, in order to ascertain the parentage of our own cultivated vegetables and fruits. Among others, the wild carrot received much attention. Among the many enthusiasts in this branch of study was M. Pousard, a French scientist who had been very successful in improving the wild parsnip, but he utterly failed in his effort to ennoble the wild carrot. Decaisne, another celebrated French naturalist, after repeated trials with it gave it up in despair, and came to the conclusion that the cultivated forms were especially created for the use of man. We are indebted to M. Vilmorin, the celebrated French seedsman, for first developing the wild carrot. He gathered seeds from plants by the sea-side which he cultivated away from saline influences, and succeeded in obtaining perfectly tender, edible roots, of large size, and perfectly smooth, in four generations, a variety which is to-day known as the "White Belgian Carrot." While his efforts were perfectly successful from seeds grown by the sea-side, he could not effect any change with seeds gathered from plants that grew inland.

A further valuable illustration of this principle is shown in the origin of the "Student Parsnip," as it shows the facility with which various vegetables and flowers may be procured, as well as the strong traits of character that favorable conditions will engender. In 1847 Prof. Buckman gathered from the Cotswold Hills, which are noted for their hard, gravelly, clay loam and generally barren aspect, some seeds of the wild parsnip, where this is among the most frequent of weeds. This seed was sown in the usual manner in the spring of 1848. As the plants grew they were duly thinned out, leaving for the crop, as far as it could be done, the specimens that had leaves with the broadest divisions, lightest color, and fewest hairs. The first crop of roots from this wild seed presented great diversities in shape, being for the most part even more forked than the originals, but still with a general tendency to fleshiness. Of these the best were reserved for seeding. The seed produced in 1849 was sown in 1850, the crop showing still greater improvement, not only in shape but in fleshiness. These experiments were carried on from year to year until 1859, when the variety had become so perfect in form, clear in outline, delicate in skin, and unexceptionable in flavor, that Prof. Buckman was induced by the Messrs. Sutton of London to have it distributed through their medium, and by them it was given the name Student, which seemed an appropriate one, as it was the result of a studious effort on the part of him who was a most persistent student in every department of agriculture. It is claimed, and we think justly, that this variety is more constant, or less liable to deteriorate, under unfavorable circumstances, than any other under cultivation. If so, it shows plainly that the work of selection was wisely and faithfully performed.

THE MOUNTAIN SHEEP AND ITS CROSS.

## CROSSING WILD WITH TAME SHEEP.

The question whether the Big-horn or wild sheep of the Rocky Mountains (*Ovis montana*) would cross with the domestic sheep has been successfully settled. The accompanying illustration was engraved from the photograph of a Big-horn and its yearling cross-bred progeny. The wild sheep was captured and tamed in Colorado, and allowed to feed with domestic sheep. It will be seen that the cross has diminished the length and size of the horns in the progeny. The fleece is also much heavier and of finer staple. Such a cross as this is highly interesting from a scientific point of view, but is of no economic value, unless further crosses with mutton breeds of domestic sheep should result in permanent increase in size of carcass without impairing the value of the flesh or wool.

**Woodlands in Autumn.**—Timber cut while alive is more durable than if not cut till dead. "Pin oak," for example, if cut while alive and when the bark will peel off, makes a durable rail, but if not cut until it has died, it is worthless except for fire wood. If a close watch is kept on the woodlands, trees about to die can be cut in the fall, when the bark will come off, and thus the most durable timber be obtained. Trees of declining vigor will show it at this season; usually they are the first of their class to lose brightness of foliage, and always they have made little growth during the season. It is not necessary to chop them up until late fall or winter. When it is done, clear up the woodlands, removing everything that will prevent the growth of something better. It will be best to cut many trees when the bark will peel, for while they have so little value that they should not be allowed to cumber the ground, it is worth while to get their highest value.

**A Cheap Silo Wall.**—A method of making walls in use in Northern Vermont, which applies to house walls as well as silo walls, appears to be very good, though, perhaps, it would be expensive in sections where lumber is high. Boards ten inches wide are simply laid one upon another with lime or thin cement between them, and at once nailed to those below. At the corners the joints are broken the same as in brick work. If the boards are all of the same width the walls are very regular and pleasing.

## HOP CULTURE ON THE PACIFIC COAST.

L. SAMUEL, OREGON.

The luxuriant growth of hop vines on the Pacific coast is a subject of general remark by travelers, nor is it necessary for them to visit the many hop fields in order to be impressed with this undeniable fact. In city and country the vine is in general use for ornamental purposes, and is a great favorite with those who require a quick and shady climber to protect some porch or window too much exposed to the penetrating rays of the sun, or to cover some unsightly object from view. It climbs the sides of the millionaire's stately mansion, and wreathes its green cones about the humble door of the poorest settler in the dark depths of Oregon's "continuous woods." Its growth is certainly remarkable. Its exploring shoots reach out in all directions, and soon cover their support with a dense mass of vine and leaves, from which the young hops hang in masses. In the fields the vines interlace from pole to pole and droop in graceful festoons of darkest green, making a cool and shady avenue miles in extent. This rank growth and the fact that the vines have not as yet been attacked by lice or any form of disease, such as play sad havoc at times with the yards of Wisconsin, New York and Europe, are attributed by growers to the richness of the soil, the length of the growing season, the cool summer nights and the absence of excessively hot summer days. These climatic conditions, so agreeable to ourselves and so beneficial to crops and fruits, are peculiar to the region near the coast, and if it is a fact that they do exempt the hops from insect pests and scourge, the future of that industry on the Pacific coast is very bright.

Hops are cultivated in the Sacramento Valley and northern coast counties of California; in all the counties of the Willamette Valley, Oregon; in the counties bordering on Puget Sound, Washington Territory, as well as Yakima county east of the mountains; and to a small extent on the delta lands at the mouth of Frazer River in British Columbia. The soil devoted to this purpose is essentially the same in nearly all these widely scattered sections, covering a distance from north to south of fully one thousand miles. The rich alluvial lands along the margins of the streams, known as "bottom lands," are always selected for hop yards. Where the soil is deep and contains an abundance of moisture even in the dryest seasons the roots, unretarded by any subsoil, penetrate to a great depth in search of the life-giving fluid. Roots nine feet long have been exposed by the erosion of streams encroaching upon the yards, and one fourteen feet in length has been on exhibition at Portland, Oregon. The famous Puyallup Valley, where hop culture has reached its greatest development, contains sixteen thousand acres of this sort of land, only about two thousand of which are now in hops, a description of which, and the method of its formation will serve for the same class of lands in other localities.

Through the center of the valley flows Puyallup River, direct from the icy glaciers of Mount Rainer. The soil of the valley is a black vegetable mold, the accumulation of years of washings of the soil and luxuriant vegetation of the Cascade Mountains. There is no subsoil, the mold extending to a depth not yet ascertained. At one place the drill of an artesian well struck a cedar log at a depth exceeding one hundred feet, and whenever the river erodes its banks logs are uncovered lying fifteen feet below the surface. Large cedar stumps have been uncovered in this way, which present the appearance of having been cut with a sharp stone implement, and above which are growing huge trees hundreds of years old. In Yakima county, which lies east of the Cascade Mountains, and in what is known as the rainless belt, the soil is different, being of a lighter texture, though also alluvial in its nature. That region was evidently once the bed of an immense lake, which has been drained by the Columbia River; in fact, Indian traditions point to this unmistakably in confirmation of the geological evidences. The soil of the valleys bordering upon the water courses is extremely rich, and whenever vivified by irrigation produces wonderful crops of grain and vegetables. Here hops reach their greatest perfection in size, weight and quality, and Yakima hops are in great demand by our local brewers.

The method of growing hops is much the same here as elsewhere. In starting fields the young creepers, or rhizomas, which start out from the roots of the old plants, are removed by grubbing, and cut into pieces six to eight inches long, each piece containing two or three pairs of eyes. These are planted early in the spring, four or five being set in a hill and the hills being usually eight feet apart, with occasional avenues left for wagons. In other localities no crop is expected the first year, but here the growing season is so long, spring opening some years as early as February, the days are so free from excessive heat and the nights are so cool, that the plants produce the first season, though of course not nearly so abundant a crop as that from the older roots. As the vines begin to grow they are trained to poles about fifteen feet high, about which they soon creep, their long arms reaching over and interlacing with those from other hills, until they form a dense network of vines, their shade preventing the soil from being too quickly relieved of its moisture by the sun. The vines flower early in summer, and in about ten days the blossoms expand, or "hop out," forming the cones or strobiles of commerce. Although the cones quickly attain their full size, they are allowed to mature on the vines until about the first of September, when the picking and curing begin. Then all is bustle and activity. The pickers are supplied with long wooden boxes, provided with handles for carrying when full. A box will hold one hundred pounds of green hops or twenty-five pounds of dried ones. The price of picking is based upon these, and fluctuates from seventy-five cents to one dollar per box, according to the law of supply and demand in the labor market, a dollar being the usual price. A hand will fill from one to three boxes a day, only the most diligent and expert reaching the higher limit, and then only by working early and late. Beginning at the ground, the picker plucks off the cones as high as he can conveniently reach, being careful not to crush them, and then the pole is pulled up and placed in a recumbent position, the end resting upon a forked stick so as to keep the fruit from being soiled or injured by contact with the ground, when it is thoroughly stripped of its burden. In this way the picker passes from pole to pole until his box is full.

Wagons pick up the loaded boxes and convey them to the kilns, which are essential features of every hop yard. Hop kilns, which average about one to every ten acres of vines, vary in size, averaging about twenty feet square, with a steep, four-sided roof, surmounted by a short ventilation tower. The floor, several feet above the base of the kiln, is made of lattice work covered with burlaps, upon which the hops are placed, evenly distributed to a depth of twenty to twenty-four inches, about two thousand pounds being the average spread in one "flooring." Below the floor is a furnace for heating the air beneath the hops. The temperature is thus slowly raised as high as from 120° to 130° and even 150° Fahrenheit. A draft is created by means of holes in the sides of the kiln near the ground, the fumes from the drying hops escaping through the ventilator, which is protected from the elements by an overhanging roof. To properly dry a flooring twenty hours are necessary. Growers who, in their haste to dry two kilns a day, turn the hops over with a fork, or permit men to trample on them in the kiln or baling room, lose more in injury to the hops than they gain in time.

It will no doubt surprise many to learn that the rich golden shade so familiar to all is not the natural color of dried hops, but is produced by sulphur. This substance is burned in a little pan under the hops, to bleach and color them. The quantity used varies with the condition of the crop and the ideas of the grower. A kiln of green-picked, discolored, mouldy, or "redded" hops, requires more sulphur to bleach it than one of well ripened cones in good condition. It is a mooted question whether the use of sulphur is injurious to the quality of the hops. If such be the case, our hops should be the least injured of any in the world, since but from one to three pounds of sulphur to a flooring are used here, as against about fifteen by eastern growers. The superior condition of the cones when picked renders the excessive use of sulphur unnecessary. When hops are sufficiently dry, having been reduced to about one-fourth their original weight, they are shoved carefully through a door into the cooling room. Much experience is required in determining just when to take them from the kiln. If not dry enough they will sweat in the bale, and if too dry they become brittle as powder in handling. The proper test is the brittleness of the stem of the cone. When cooled they are lowered to the main floor of the warehouse, and, unless needed for immediate shipment, are allowed to accumulate in layers, one drying above another, until the whole crop is in store. In this way they not only become thoroughly toughened, but permit the bales to be made of an even quality. The latter object is accomplished by taking the hops off in perpendicular sections, a portion of each layer thus getting into every bale. Baling is done in portable presses of sufficient size and power to make a compact, smooth bale of two hundred pounds weight. The greatest care is necessary in handling dried hops not to break or powder them, and thus lose much of their strength by the sifting out of the lupuline, the yellow powder containing the bitter principle, or injure the appearance of the cones, upon which their market value largely depends.

## PINKS—CARNATIONS AND PICOTEES.

Few real lovers of flowers, not those guided by fashion, who, if asked to name their special choice among florists' flowers, would not place the pinks very high upon the list of their favorites. The genus *Dianthus*, the genus of the pink, is a large one, species being found in every quarter of the globe. Botanists have, first and last, described over two hundred species; a careful revision, within the last quarter century, has reduced this number to about seventy, of which many are in cultivation. Indeed the pinks known as carnations, etc., are among the oldest of florists' flowers, by which we mean those flowers, the varieties of which are kept distinct, and multiplied and improved by cultivation. It is the varieties known as carnations, etc., that we have under consideration at present; those in their present great variety are supposed to have originated from the old "Clove Pink," *Dianthus caryophyllus*, a native of Great Britain and Continental Europe. Its stems are nearly woody below, and its pale, grass-like leaves are seen in its cultivated descendants. A strong plant will be from two to three feet high, its erect branches, each terminated by a flower of great beauty of color, and of most charming fragrance. A recent "Gardener's Chronicle" (Eng.) publishes a full page engraving, giving three esteemed varieties of *Picotees*, and five of *Carnations*. We reproduce this engraving, somewhat reduced in size, to show what a high authority regards as the characteristics of the Carnations and *Picotees*. We cannot hope to produce as yet colored flowers in black and white with more success than is here done. The three lower flowers are *Picotees*. The ground work of each petal is white and edged with scarlet, red, purple and other colors. The ground work of the petals is sometimes yellow, and this or the white ground sprinkled with the colors (scarlet, etc.), above mentioned. The "Chronicle," it will be observed, makes the *Picotees*' division equal in importance or rank with the Carnation. Indeed, there is great confusion among authors in this respect. Most divide the Carnations into picotees, flakes and bizarres. The "Chronicle" in its five upper flowers illustrates its view of a carnation. These have a clear ground with broad markings of color running lengthwise of the petals. If there is but one color they are flakes; if there are two colors in the marking, the flowers are bizarres; when the flower presents but one color only they are selfs. Some yellow varieties of this kind are highly prized. The new "Perpetual Carnations," will be found described in the catalogues, and some are of great promise. All are fragrant, the *Picotees* being less so than others. It is to their fragrance that the flowers owe so much of their popularity. Parkinson in his "Paradise," thus speaks of these pinks in 1629; showing that the learned old herbalist had a love for flowers. He writes: "But what shall I say to the queen of delight and of flowers? Carnations and gillo-flowers, whose bravery, variety and sweet smell joined together, tyeth every one's affection with great earnestness, both to like and to have them." The application of the name "Gillo-flower" to this plant is due to a misunderstanding of a French name. These pinks may be readily raised from seeds even in August. The young plants should be grown until the frost destroys them, when the plants may be transferred to a frame; or place a frame over the seed-bed, and fill the frame with leaves, put on the sash and leave all until spring. Late in April transplant the young pinks to the bed where they are to bloom. Promising plants may be selected to propagate from by layers or by cuttings. One with a small piece of ground and a love for horticultural work, can, by raising seedling carnations, etc., engage in a work likely to produce satisfactory results.

GROUP OF CARNATIONS AND PICOTEES.

**A New Clematis.**—Nothing in the way of hardy flowering climber has ever surpassed, if any have equaled, the hybrid forms of Clematis, especially those obtained by the Messrs. Jackman, of Surrey, Eng. The finest of these is named *Clematis Jackmanni*, which for its ease of propagation, free flowering, richness of color and substance have made it a prime favorite. Florists have long wished for, and have endeavored to procure, by crossing of various kinds, a white Clematis which should have all the good qualities of the purple Jackmanni. Charles Noble, of Bagshot, after innumerable trials, has succeeded by crossing a white *Clematis patens* upon *C. Jackmanni*. Its early flowerings were not satisfactory, but, by good culture, it was so far improved as to be sent out as a white Clematis Jackmanni, or *Clematis Jackmanni alba*. If, as claimed, this is a white Clematis, with all the good qualities of the type, it will be welcomed by all lovers of the Clematis.

**How to Have Early Poppies.**—If very early poppies are desired it is well to take "time by the forelock" and prepare the bed in the fall. Sprinkle the seed on the top of the ground just before winter fairly sets in; or it can be done later. The finest poppies I have ever grown were sown during a January thaw, while the bed was free from snow for a day or two. Poppy seeds are very tiny, and if planted too deep will not come up, or if not sufficiently covered soon dry up; but the rains and the melting snow seem to regulate the matter nicely. Use as little seed as your conscience will let you, else the work of thinning out will be tiresome. Poppies should always be sown where they are to bloom, for they are very difficult to transplant. G. A. Woolson. Vermont.

# THE HOUSEHOLD

## Make a Home for Your Children.

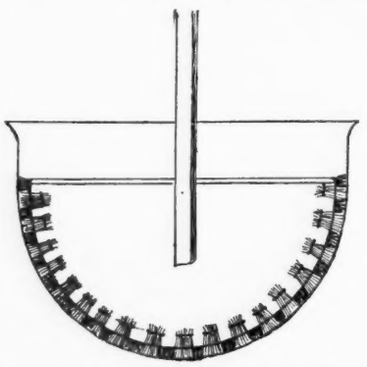
ALICE CHITTENDEN.

Last year I spent a number of months on a California ranch, and as I was myself brought up on a New Jersey farm, and have considerable knowledge of farm life in other States, I could not help noting the contrast between the home life on this Western ranch and that of others with which I had been familiar. Farm papers are full of talk about keeping boys on the farm. There were nine of the Harvey boys, and they had all stayed on the farm. Curtis, the eldest, had left the paternal roof, but only to build a home for himself on one end of the half section which forty years before had been taken up by Mr. and Mrs. Harvey under the homestead and timber claim, and which was now a magnificent fruit and cattle ranch, still embracing the original 320 acres. It was on Curtis's end of the farm that I made my stay, and it was the happy life on this model farm which set me thinking, and wishing that every farmer's boy could have the same healthful home influences. There were four boys in this third generation of Harveys, and the family purse was evidently a limited one. Large stories are in circulation of the great wealth that is rapidly acquired by California ranchers, but these instances, when true, are exceptional, and there, as here, there is no royal road to wealth on the farm. Here, however, everything was not made subservient to the acquisition of wealth. All worked, and worked hard, but their life was not all work.

One day Curtis, Jr., a bright lad of nineteen, asked me to come in his room to see a set of bookshelves he had lately made, and in this quaint and pretty room I found the secret of his contentment with his life. *He had a home.* Small as the house was, as fast as the little Harveys left their parent's room, a den, though ever so small, which they could call their own, was given them. There is nothing so dear to a boy's heart as his "room." I thought of the bare garrets to which children on a farm are often relegated, perhaps two in a bed, and two or three beds in the same garret, as circumstances might demand, and wondered why, if farmers want their boys to stay on the farm, they

AN ORNAMENTAL PIECE BAG.

do not offer them some inducements to do so. Let me tell you in as few words as possible, how this lad had beautified his little closet. There was no carpet on the floor. Thirty cents' worth of light oak stain, and twenty cents' worth of varnish, did duty instead, and a beautiful polish was the result. The bed was a cheap three dollar affair in imitation ash. The bureau was made from a packing box, fitted with three shelves, and concealed by a curtain of bright chintz, running around on a wire passed through screw-eyes. The top was covered with a planed board larger than the box, and stained and varnished like the floor. The small mirror above had a frame of plain pine, six inches wide, covered with beautiful mosses, lichens, and gnarled twigs glued on. Pictures from several of the AMERICAN AGRICULTURIST'S frontispieces were framed in the same manner. The washstand was of like manufacture with the bureau, and a tin pitcher and a basin were painted red. Curtains of three cent cheese cloth, trimmed with a band of turkey red, hung at the windows, showing that his mother had interested herself in making her boy happy. Curiously twisted canes of the beautiful manzinita wood were grouped on the wall, and above the bed hung a banjo which he played with a natural talent. This he told me he had earned by getting subscriptions for the AMERICAN AGRICULTURIST. The book shelves were made from boards which



DEVICE FOR MAKING APPLE BUTTER.

he himself had planed, because in that section the planed boards were too costly. It was formed of two uprights of twelve inch boards, and five shelves, which could be taken out, as they rested on two screw eyes inserted at either end of the uprights. They were simply varnished, allowing the grain of the wood to show.

A most comfortable divan in the room was of his own manufacture, and cost only a dollar. The frame work, over six feet long, to suit the unusual hight of this young giant, who stood six feet three in his hose, was made of rough boards, and had a slanting head placed at a most comfortable angle. Barrel staves, with the convex side downward, were laid crosswise almost close together, and eight springs were fastened on this, and well filled in with hay, which formed the entire stuffing. Burlap was tacked over this, and then some old white goods which his mother had given him, and the covering was made from the light calico skirt of one of his mother's half worn dresses. The only cost was eighty cents for springs, and twenty cents for a set of casters. Large pillows were stuffed with hay, and covered with calico. It was luxurious as far as comfort went, and with a dollar or less spent in cretonne for covering it would have done credit to any country parlor.

Give your boy a room for himself, and a chance to beautify it, and see if it doesn't work better than Bob Burdette's plan of nailing him to a tree. Wait to furnish your parlor until you have made the children's rooms comfortable and pleasant, and then if you haven't money enough for a carpet, stain your floor. If you want children to stay at home you must make them a home.

## Making Apple Butter.

The accompanying illustration, from a sketch furnished by a Philadelphia subscriber, shows a device for sweeping the bottom of a kettle while boiling apple butter, and thus preventing it from burning. A piece of inch board is cut two inches less in length than the diameter of the kettle, the lower edge shaped to the inside of the kettle, and a bar of some tough hard wood is bolted to project above the upper side. Half an inch above the lower edge a row of gimlet holes is bored two inches apart, and twine or wire is woven through them. Stubby cuttings of broom-corn, which are rejected by broom makers, are inserted in the loops of wire or twine on both sides of the board, leaving the brush projecting an inch beyond the edge and made fast. A rotary motion is imparted to the apparatus which effectually sweeps the bottom of the kettle. Country-made apple butter, with nothing in it but apples and cider, is a far different article from the compound manufactured in the big cities. This consists of smoked dried apples, made slightly sour with tartaric acid and sweetened with brown sugar. There have even been stories afloat of the use of pumpkins to eke out the apples, in order to give the stuff smoothness. Grape sugar is used by some in place of cane sugar.

## A Knitted Dishcloth.

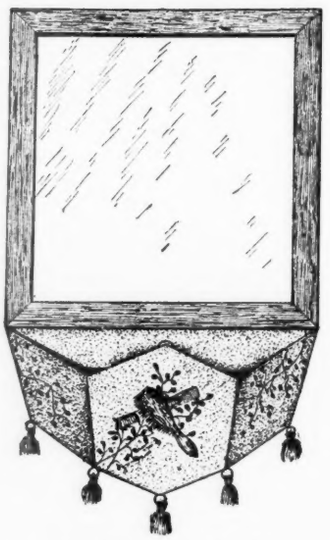
Use medium-sized wooden needles and a ball of common candle-wicking. Cast on twenty-five or thirty stitches and knit back and forth in plain garter stitch till you have a piece as long as it is wide; bind off loosely. If preferred, soft, loosely woven cloth, torn in strips an inch or more in width, may be used instead of candle-wicking with very good results. These dishcloths are soft, convenient and easily cleansed, and are favorites with all who have tried them. Having material and needles ready, they are nice to pick up for a few moments' knitting at times when it would be impossible to work on anything requiring thought—an important item to an industrious, hurried housekeeper.

## Home-made Fancy Chairs.

A neatly ornamented chair for a sitting-room can be made by taking a small wooden-backed rocker with a woven rattan seat and painting it white or light blue, pink or yellow, and then dressing it up with a slumber pillow and a thin square cushion to match. Sometimes the cushion is made long enough to hang down in front nearly to the floor; but it is usually simply a square cushion covered and decorated like the pillow. These dainty affairs are very popular. One white chair which we saw had a pillow and cover, made of very coarse figured wool lace over yellow silk, with the figures in the lace pattern drawn out by half solid work in yellow.

## A Hanging Piece Bag.

To make the piece-bag shown herewith requires a piece of pasteboard cut horseshoe shape, covered both sides with cloth, silk or muslin as means or fancy dictate, and finished as shown in the engraving. Buttons are used to fasten down the ornamental strips that separate the small pockets which are designed to hold different kinds of pieces for mending. The drawing strings to each pocket should be of colored cord and end with a tassel. The horseshoe shape may be utilized by being



COMB AND BRUSH CASE.

double and having places for holding darning and tape needles.

## A Serviceable Comb and Brush Case.

This convenient little affair, to be suspended under a glass as in the illustration, is made of gray linen. The box is first formed of pasteboard, the parts covered separately inside and out with plush

or other material, and then neatly over-handed together. The brush and comb in front are done in outline stitch with coarse, red working cotton. The tassels are made of the same and drawn through small, brass rings sewed on the corners.

## What to Wear in October.

To those who are considering the purchase of Autumn suits, that may be worn throughout the winter, we would say select fine, soft, plain material of all wool, in medium or dark shades; Henrietta cloth, cashmeres and the finer quality of serges being particularly well worth buying. As usual, black will be popular for street wear, even for those not in mourning; while in colors, red, gray, green and prune shades stand highest in favor.

Trimmings are more elaborate and expensive than ever, especially the stylish cashmere galloons, in which various metals are combined in Oriental designs of palms and arabesques; but a very little of these goes a great way and often transforms an extremely plain gown into an elegant costume. Skirts continue as long as they have been during the summer. That is, they touch the ground; while on the other hand, the tendency is toward the shortening of the waist. Two small reeds are still run in underskirts in spite of all predictions, that they were to be entirely given up, and the tournure in a modified form has taken a new lease of life. Very little drapery however is used, and long straight folds and plaits are considered more elegant than the bunchy appearance we have known so long.

Russian blouses have developed into the Russian polonaise, in which the fronts are crossed from right to left, the right one gathered at the neck and edged along the opening with braid or a strip of embroidery. The redingote dress, too, offers many variations in style, one of the newest, perhaps, being to tuck it by hand, in fine, narrow tucks from the neck to the foot, in continuous breadths. These form the back, sides and part of the fronts; while the direct front is draped in

COFFEE-POT HOLDER.

crossed, irregular folds. The upper part of the waist is finished with Directoire *revers* of moire, the same silk forming a wide, folded girdle about the waist.

For those who can afford it velvet will undoubtedly be the popular fabric the coming season, and for a handsome dinner or reception dress it will be made up in redingote or Directoire style, with an embroidered waistcoat. It will also be largely combined with other materials.

Cloth jackets for the Fall are either open or close. The fronts of the former mold the bust closely, but do not join each other. They fall away to display the lining, which is always of silk of a contrasting color. The collar is merely a small, narrow band. The latter, on the contrary, is perfectly tight-fitting, buttoned up to the neck and has an extremely short basque. It is usually trimmed all round and down the front with passementerie.

Halo hats of dark, rich velvet are likely to be popular this winter, and as the name indicates they encircle the face of the wearer like an aureole. A profusion of soft, drooping feathers will be a suitable trimming for this style of head-gear. At present, however, many of the Fall hats displayed are of thin, fine felt so light as to require wiring to keep them in shape. A few novel bonnets, too, are made of braid formed of woolen fabrics cut into strips; while some pretty hats prepared for October and November wear are of thick, colored crapes, shirred on rattans in a way familiar to our grandmothers; and trimmed with sprays of woodbine, maple leaves or autumn flowers mingled with heads of grain.

A simple and stylish finish for the neck of a dark dress is three-eighths of a yard of purl-edged ribbon, an inch and a half or two inches wide, fitted smoothly around the standing collar of the waist and fastened behind with a bow of the same. Either gros-grain, watered, or velvet ribbon may be used, the latter being most becoming, while a white ribbon collar can be used with several gowns.

Aprons are often worn in the house, and many pretty, dressy little aprons are affected by young ladies, made of pale-hued cambric, embroidered in white; or pongee silk with a frill all round and long loops of ribbon flying from the waist. More useful, however, are the large, white "bonne" aprons with wide strings hemmed and tied in a huge bow and ends at the back; or those of sheer cambric, daintily embroidered with drawn-work, open-work, embroidery and insertion.

## Chair Scarf.

The illustration shows a convenient and tasteful arrangement of a fancy towel as a chair scarf. Turkish towels, or any of the various fancy weaves in stripes, borders, or figures, are used for this purpose where something is needed that may be easily laundered. They have replaced crocheted and embroidered tidies in many homes where time is precious and easy chairs are for use, not ornament. They are often seen tied in a loose, soft knot in the middle, if their length will permit, or confined by a band of soft, broad ribbon, tied in a large bow. The ribbon is expensive and soon soiled, but the cord and tassels here shown are almost indestructible and are as easily cleansed as is the towel itself. Of white or tinted darning cotton, or of some of the fine cords used for fancy knitting or crochet, make a large, twisted cord a trifle more than twice as long as the towel is wide, cut it in two, and run both pieces out and in like a gathering thread across the middle of the towel, about an inch apart, taking inch-long stitches. Finish the two ends together with one tassel, which gives only one on each side of the towel. When drawn up and tied it forms a cluster of four nice loops and two tasseled ends. It is never slipping out of place, or lost—either from the chair or the washing, and it may, all together, be spread out flatly or folded when necessary as smoothly as any towel. One might think a large cord could not be run through the cloth in that way, but it can be done without breaking a thread, even if the towel is quite firm, by making the perforations with a stiletto; but towels of fine firm texture are seldom used as chair scarfs. Pretty towel-shaped chair scarfs can be made from the coarse, white linen salt-bags so common in farmers' homes, by fringing the ends, turning hems an inch and a half wide along the sides, and adding several lengthwise rows of drawn-work more or less wide, according to fancy or the time at one's disposal; there should always be one or two rows just inside each hem. The tassels should be of white darning cotton, if white thread is chosen for the drawn work; if a color is used, a little of it should be mingled with the white in the cord and tassels.

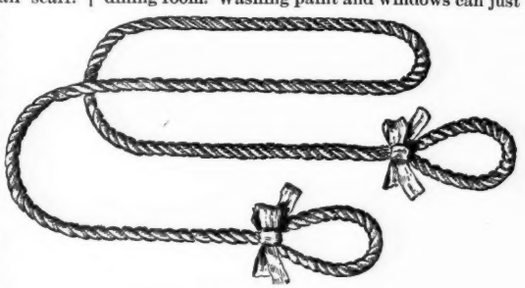
## A Sleeve Holder.

This convenient little article is made of a thick twisted cord of zephyr, or any kind of wool that is soft and strong. The wool is first doubled to form an eight-fold strand nearly three yards long and closely twisted, then doubled and twisted again; it should be about a yard and a quarter in length when finished. Double each end so as to form a loop, as shown in the illustration, and fasten securely. Wind narrow satin ribbons around to cover the fastening, and tie in tiny bows, which should be secured from untying by a few invisible stitches. Pass one loop over the thumb; wind the cord up over the lower part of the sleeve and back again till all but a few inches are used, and slip the remaining loop over the other one on the thumb; then draw on the dress or jacket sleeve, and the inner sleeve will remain smoothly in place. It can be removed and adjusted to the other wrist in an instant, the whole process taking not half the time required to straighten the inner sleeve when no sleeve holder is used. It takes but a few moments to make one, and the expense is almost nothing, but the comfort they bring to those who wear tight sleeves can only be appreciated by those who have given them a trial.

## A Drive in October Woods.

LILLIAN MAYNE.

Nothing is so charming at this season as an afternoon drive through the woods. But to many housekeepers this seems an impossibility, as it is the season for preserving fruit and preparing the house for winter. Preserving must of course be attended to when the fruit is ready, and this I do as early as possible in the morning. Preparations for winter I leave for rainy days when I cannot drive. If the rainy days do not come, we do not suffer for want of winter preparations, as I have a grate in my sitting room and an oil stove for the dining room. Washing paint and windows can just



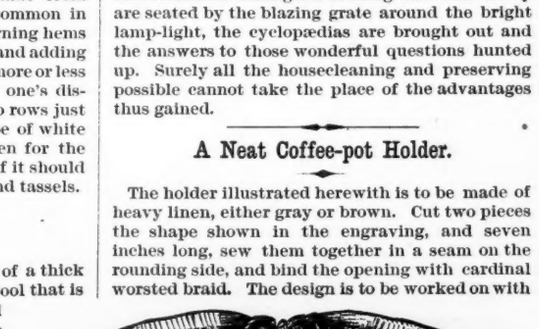
A SERVICEABLE SLEEVE HOLDER.

as well be done on stormy days when there is no temptation out of doors.

I have a gentle old horse and a comfortable if not very stylish wagon with a canopy, and with this establishment I explore the forest roads, taking a map with me to prevent the possibility of becoming bewildered and losing my bearings. In this way I lay in a stock of health and strength that lasts for a year. Farmers' wives will never appreciate what I am writing until they start out with their children, and possibly a friend, for a long drive through the woods. The children will abandon any of their projects for a drive with mother. To one having ordinary powers of observation, the woods at this season are full of lessons. A mother will be surprised to learn how much instruction she can impart to her children and how many new ideas she will receive from them—their young, bright eyes take in so many more things than we believe them capable of seeing. If their quaint puzzling questions cannot all be answered on the spot, the solution of them will serve as entertainment during the evening when the family are seated by the blazing grate around the bright lamp-light, the cyclopædias are brought out and the answers to those wonderful questions hunted up. Surely all the housecleaning and preserving possible cannot take the place of the advantages thus gained.

## A Neat Coffee-pot Holder.

The holder illustrated herewith is to be made of heavy linen, either gray or brown. Cut two pieces the shape shown in the engraving, and seven inches long, sew them together in a seam on the rounding side, and bind the opening with cardinal worsted braid. The design is to be worked on with



A PRETTY CHAIR SCARF.

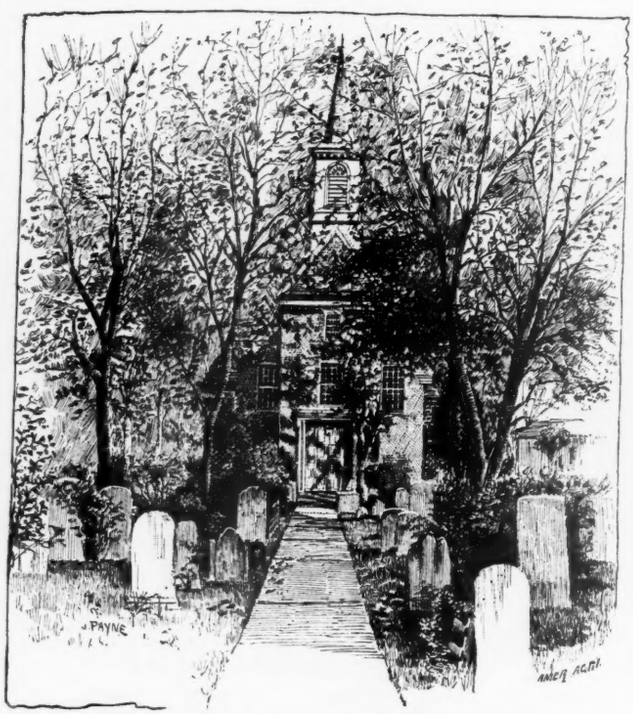
cardinal working cotton in solid and outline stitch combined. The spray is only embroidered on the back. Some quotation like this may be used instead if preferred: "Take a cup and drink it up,

and call the neighbors in." Such holders can be made of cloth if not to be used constantly so as to need occasional washing, but linen is the best for real service.

## A Quaint Old Church.

More than 250 years ago the good ship Key of Calmar with the little Bird Grip, or Griffin, in her wake, sailed from a Swedish port, under young Queen Christiana's authority, filled with people, provisions and ammunition, to found a Swedish colony in America. Of the long and weary voyage of the Key and Griffin there is no record, but it was some time in 1636 or 1637 that the brave adventurers landed on the western shore of the Delaware and built their huts and caves along the banks of the Delaware and Schuylkill. On Christiana Creek they built a fort which was named for their young queen, Fort Christiana.

History gives but brief account of these Swedish pioneers, yet they were among the first of the early colonists. It was only some thirty years after the first English colonists had settled in Virginia, and sixteen or seventeen years after the Pilgrim Fathers had landed on Plymouth Rock. The Dutch had settled on the Hudson, and there was a Dutch fort and settlement on the eastern shore of the Delaware, built a year or two before the Swedes landed on the western bank. The site of the great city of Philadelphia was then a wild, unbroken forest. In the Swedish village of Wicaco, now the oldest part of the city, close by the river shore, the Swedes built their little log fort and church. The only windows were the loop-holes in the walls, through which the wind whistled shrilly in the wild winter days, and from which they could sight their old firearms and defend themselves from the attacks of foes. Wolves howled around the Swedish settlement at night, and noble game ranged the woods in freedom and tempted the hunter's aim. The founders of the little Wicaco settlement were of a hardy, God-fearing race. Unlike their Dutch neighbors, they were not given to traffic, but followed the peaceful pursuit of tilling the ground. Dr. Collin, the last of the Swedish missionaries, in his history of the early Swedes, wrote that "they acquired by fair purchase from the natives all the western shore of the Delaware from Cape Henlopen to Trenton." It appears that for many years they lived in peace with their savage neighbors and taught them something of their own religion. When, a few years after, a Swedish ship, called the Mercurius, arrived in the river, and the Dutch tried to prevent her from going up, it is recorded that the Indians "who loved the Swedes," interfered in their behalf and convoyed the ship by the Dutch port.



OLD SWEDES' CHURCH AT PHILADELPHIA.

In 1664 a British force arrived from England and brought the Dutch and Swedes under allegiance to the English crown, and eighteen years later came William Penn and founded Philadelphia. The Swedes were at first opposed, but "by kind promises and other means" were after a while induced to acquiesce. Of the Swedes "who inhabit the freshes of the Delaware," William Penn wrote home to England: "As they are a proper people and strong of body, so they have fine children and almost every house full; rare to find one of them without three or four boys and as many girls; some six or seven sons. And I must do them the justice to say I see but few young men more sober and industrious."

Though the Swedes at first dwelt in peace and friendship with the Indians it appears that these friendly terms were not always maintained, for a legend of a savage fight in which the old church was the place of battle and the Swedish women the defenders, comes down from the dim and distant past. One of the actors was the granddaughter of Sven Schute, the early commander, who once held a title to all this goodly land. She told the story in her later years, in London, where she died at a great age. A friendly squaw came to the house of the Svens, one day, making an errand of selling herbs, and gave warning of an impending attack by the Indians. It was the season of making soap, and the Swedish women were all soap-boiling. Lifting their kettles of hot fat from the fire, they hurried into the church, while the children followed with loads of firewood to keep their novel ammunition at a fierce heat. The conch alarm was sounded and the church was filled. The Indians came, and finding the people penned in the church they began to dig about it to make an entrance. Then the Swedish women opened fire upon them, with their kettles of hot fat and soap, pouring it from the windows upon the bare, red backs of the savages until they ran howling away.

More than half a century had passed since the Swedish pioneers had come from their fatherland before the beginning was made of the old Swedes church, which is now standing, and is claimed to be the oldest church edifice in the country that is still kept open for public worship and is in good repair. The earlier pioneers had been laid in their graves under the green sward along the Delaware shore. The city of Philadelphia had been marked out in geometric lines that form its streets to-day. A new generation tilled the soil, met on Sunday in the little log church, and walked under the nut-trees of the Wicaco woods. But though all communication had long been cut off from their native country, the Swedes still kept their home-customs and faith, and reared their children in the love of the fatherland. Their last pastor had served them till he was old and blind. The pastorless flock gathered weekly in the little block-house to listen to the reading of an old church elder. They walked long distances, some ten or fifteen miles, to hear the prayers and services of their church. In this strait they sent an appeal to Sweden, praying that a man of God of their own nation and faith might be sent to them.

This letter never reached their native country, and it was several years after that a Swede, named Jean Thelin, learned of the little flock of Swedes in America, and their humble petition for a man of God to teach them and their children. Jean Thelin laid their case before Charles XI, then the reigning Swedish King. Three missionaries sent by King Charles, with Bibles, hymn books and catechisms, arrived in June, 1697, and were welcomed with great joy. One of these missionaries, Rev. Mr. Rudman, who became the pastor of the Wicaco church, wrote home: "They look upon us as if we were angels from heaven;" and another, Rev. Eric Biork, wrote: "I cannot mention without astonishment, but to the honor of these people that we hardly found here three Swedish books, but they were so anxious for the improvement of their children that they lent them to one another so that they can all read tolerably well." He also wrote: "The houses are all built after the Swedish manner. The women brew excellent drink as in Sweden; they have also a liquor made of apples or peaches, which they call cider. It is very pleasant to the taste and very wholesome." The missionaries called Philadelphia "a clever little town," and "there are no poor in this country," they wrote, "but they all provide for themselves, for the land is very fruitful and no man who will labor can suffer want."

People came in haste for more than thirty miles to meet and welcome the missionaries. A church was immediately begun at Christiana and soon after the Wicaco church was built. There was a controversy first about the location of the church, some of the people wishing it to be built at Passyunk, and the matter was finally settled by shaking the names Wicaco and Passyunk in a hat. Wicaco was drawn and the church was built on the spot where the old log church had stood; there was also a burial ground where the Swedes for many years had buried their dead. Young and old entered into the building of the church with the greatest enthusiasm, and the priest was seen working with the laborers, carrying the hod.

The new church was the wonder and pride of the settlement. The fine brick, the carvings inside, and the bell were sent from Sweden by King Charles, who for many years exercised a fatherly care over the little flock of his countrymen. The building was dedicated in July, 1700. A marble baptismal font which was brought from Sweden stands within the chancel, and puffy little cherubs face the pulpit from the choir gallery, where also is a wooden representation of an open book with the inscription: "The people who sat in darkness have seen a great light." The people flocked from far and near to hear the gospel preached to them in the dear Swedish tongue. An inlet from the river ran up to the building and the shores were lined on Sabbath days with the canoes of the congregation moored in the shade of the sycamores. When the church was built it stood in the midst of green, open fields, and a grassy slope ran down to the shore of the Delaware. Now a seeker of the church threads his way among the old houses and sailor-haunts that crowd the shore, catching sight, now and then, of the top of the spire, pointing upward from the quaint little belfry above the dust and din, as it has done through all the changes and inroads of nearly two centuries. At last, on Otsego street, below Christian, he will come upon an entrance, through an iron gate, to the church, which is reached by a pathway through a shady churchyard. Inside the yard the noise and bustle of the busy life outside fade away from sound and thought. In this pleasant, shady spot, through the summer days, thousands of birds are singing and chirping in the trees over the sunken graves where lies the dust of the old Swedish pioneers, their names and resting places almost forgotten. There are slate-stones over some of the older graves, which were cut in Sweden and sent by long, slow voyages to this country. Here was buried Alexander Wilson, the ornithologist, who died in Philadelphia, in 1813, and was laid by his own request in the graveyard of the Wicaco church, where he worshiped when living. There are storm-beaten old stones with inscriptions still legible, commemorating the dead who have been dust and ashes for more than a hundred and seventy-five years; and others in memory of the heroes of American wars. The homeless sick and wounded soldiers who died in Philadelphia hospitals during the civil war were buried in this cemetery.

From the rear of the church one can look down upon a sea of forest and see the river where the canoes used to come dipping and dancing over the shining waters in those long-forgotten Sundays. A great emigrant depot extends along the river front. In place of the shady sycamores and the bark canoes moored in their shadow, there are crafts of heavy traffic, bales of merchandise, machinery, dray carts and noisy locomotives. Only the Old Swedes church and the birds singing over the graves with quaint Swedish names on the head-

stones remain to link the present with that distant past. The church is neatly kept and the church yard is tended with care. The church, known both as the Old Swedes church, also as the Gloria Dei parish, is of the Protestant Episcopal denomination. The Swedes were Lutherans. The last of the Swedish missionaries, Nicholas Collin, died in the early part of the present century within the memory of a few old Philadelphians, and was buried below the chancel of the church, where many years before he had buried his wife and written above her a touching tribute of a husband's grief and affection. The remains of three rectors and of prominent churchmen who died in the last century are buried under the chancel. Collin had lived here a toilsome life, full of arduous duties, for nearly half a century, and his memory is held in honor in the place where he labored. It was Collin who translated from the Swedish language such records as remain of the early settlers.

## An Inexpensive Summer Resort.

EMILY H. LELAND, WISCONSIN.

My friends lived in a finely furnished flat in a fashionable quarter of the city. Some serious losses in John's business prevented this year the usual outing by the sea or among the mountains. John and Mary could have remained in the city with heroic resignation, but the heat and the confinement threatened to be hard on the twin boys and little baby Nell.

In the beginning of June, John noticed that his wife was very silent and preoccupied. As she was subject to literary attacks, he thought she might be writing a serial story and accused her of it. But she only smiled and continued to have a far away look in her eyes. One Saturday John came home to lunch and found a note, a sandwich and a salad on the sideboard, and the whole family missing. The note gave directions as to what train he should take to find them, at what point he should stop, that he would be met, and that he was not to worry. Some disturbed thoughts of a country villa and the huge expense of it rose in John's mind, but he tried to remember that Mary had a clear head. He eat his solitary meal and the appointed hour found him speeding countryward. He was met in the dusk by a man who appeared to be deaf and dumb, and rattled off over rocky roads and up steep hillsides until, still higher up, there twinkled the lights of what the man laconically announced was "the place." He was dumped down by a dilapidated gate and the man said "No charge," and drove away. A lantern came bobbing down from the hights. It was borne by Mary herself. "You're not one minute too late," she said, "for we have had a world of things to do," and then—as John afterward related—she hustled him along through briers and brambles and over granite boulders and fallen trees into a house. He stepped at once from a little porch into a large, low-ceiled room, where a pretty little fire was blazing in a monstrous fireplace, and a table was spread for high tea—if high tea can take place at ten in the evening. The room smelled of fresh lime, soap-suds, pine boughs, broiled chicken, coffee and roses. Mary stood beaming upon him dressed in a gingham gown and a large white apron. John opened his mouth to speak and then Mary poured forth her explanations. This was her serial story:

A deserted farm-house, which she had noticed and admired when coaching through the country a year ago. She had written on and found she could have it for "the season" for nothing; then she had the cellar thoroughly cleaned, and the whole place scrubbed and whitewashed from top to bottom and some windows mended. The bill was $7.80. She had sent on a second-hand cook stove, half a dozen cot-beds, some folding chairs, and had a carpenter make a plain stout table and fix the door and shutter fastenings—amount $31.25. She had brought blankets, curtains, rugs, a little china and a few books. Milk and vegetables, fruit, butter and poultry could be bought very reasonably at a farm-house a quarter of a mile down the hill. A beautiful spring bubbled out of a rock in a corner of the gnarled and artistic old orchard. Wild strawberries grew at the very door-step. The view was lovely. The dear boys had tried to keep awake, but were so tired they had gone to their cot-beds an hour ago, and baby was sleeping as she had not slept for a week. And John's favorite Aunt Nell was coming on Monday to stay all summer, and they were going to do all the work except the washing and scrubbing.

John could only gasp—"Well, well!" and sink into a chair. But after the first shock was over he entered into the spirit of the enterprise like a boy just out of school, and now affirms that he considers a deserted farm-house high upon the hills considerably ahead of anything he has seen yet in the resort-line—even if a fellow's bank account *isn't* at low tide. He doesn't want farmers to deliberately go and desert their homes, but whenever there is an unoccupied farm-house healthfully situated, he thinks a little clearing up and a little advertising would bring a good tenant for the summer months.

## Give Children Something to Do.

MRS. H. H. TURNER.

An important point in managing children is to always have ready something for the little hands to do at those times which come quite often on rainy and other days when, tired of play, they listlessly gaze through the window or wander aimlessly about, not knowing what to do with themselves. Children at such times are a great trial to the busy and often nervous people of the house, and are quite likely to be scolded, though such a course is so unwise and unjust that it can lead only to the worst results in the child's future. Calm and reproving words, kindly spoken, are necessary with all bright children and are usually very effective, but words uttered in a sharp, scolding tone must in most cases work an injury to the child's disposition. It is all the more sad, because the matter could be so easily managed by a very little attention on the mother's part.

How often we hear mothers or older sisters say to some little child who is full of desire to do right if it only knew how, "Do get something to do; how lazy you are; I never saw such a good-for-nothing child. I am sure I don't know what is to become of you," and a great deal more of such talk, which, alas, most people have heard too often. The child at such times is not in fault. It is the mother's duty to see that suitable work is always ready, and she should require the child to do a moderate task for which she should not be afraid to give a due measure of praise after it is done. Always be careful to see that the child is not kept too long at one task as such a course would be worse than idleness.

It is worthy of note that the work given to a child has a great influence in molding the mind and taste. A child kept always at knitting stockings or cutting carpet rags will be very practical, perhaps too much so. A wise mother will have a variety of work, both useful and ornamental. Some parents think it useless to teach boys to sew or knit. It is not, however, for there are many times in a boy's life when such knowledge may be useful. I have often observed that many college boys could mend their own clothes while they were quite up in their classes. I think the subject should be thoughtfully considered by parents, seeing to it that time should never hang on their children's hands for want of something to do.

## Care of Convalescents.

When a member of a family is sick, that one becomes the object of tenderest care and solicitude by night and day, and no sacrifice of feeling or comfort is too great to make for the sufferer's sake. But when the danger has passed and the doctor's constant visits have ceased, the family routine, for a while broken up, is again established and the invalid, unless under the care of a regular nurse, is left more or less to himself.

It must be so in a busy household, and yet the convalescent really stands in great need of care and companionship. Without strength to pursue the usual avocations the weary hours move slowly and depression seizes on the spirits. This is the time when a friend who can make a few hours' leisure in each day become valuable.

Of course an excess of company is not to be allowed, but it is a blessing if two or three kindly souls, who are well gifted with tact and intelligence, will consider it their mission to call in turn and read to the patient, or talk with him socially, or play a game with him that is simple enough to be no tax upon his thinking power. But invalids are no judges of their own condition, and so some one should watch sufficiently to guard against over fatigue or excitement.

When one is sick, and life seems rather eventless, meal-time becomes of the greatest importance and, happily for most convalescents, five light meals instead of three are generally allowed, so that the pleasing sensations of anticipation and realization are of frequent recurrence. Every meal should be daintily served and only as much food exhibited as the physician allows. A small quantity will stimulate the appetite when a large supply would disgust and destroy it. A patient should never be kept waiting. The well-appointed little waiter with its agreeable freight should be presented as soon as the eating hour arrives, and as soon as the meal is over, all traces of it should be removed. Carefulness in both these particulars will do much to promote a convalescent's comfor and well doing.

## Reliable Recipes.

**Miroton of Veal.**—This is a dish that no one would think of insulting with the name of hash. Mince some slices of cold veal with about quarter the quantity of cold boiled or baked ham; season with pepper, grated nutmeg, and a small minced onion fried in butter. Add also a French roll that has been soaked in thick, sweet cream, and a little grated lemon peel. Put all these into a pan over the fire, and stir until heated through; add a well-beaten egg; press the mixture into a hot buttered pudding dish and set into the oven to brown. Turn out upsidedown on a hot dish, and serve with a thickened gravy made from the bones.

**Rich Crullers.**—Beat to a cream one-quarter pound of butter, and mix with it the same quantity of fine granulated sugar, four well-beaten eggs, and flour enough to roll out; do not forget a pinch of salt. Cut the paste into oblong pieces four or five inches in length with a paste cutter, divide the center into three or four strips; wet the edges, and plait one bar over the other, so as to meet in the center. Throw them into sufficient boiling lard that they may readily swim; the lard must be hot enough that the cakes cook at once when thrown into it. When of light-brown color, take them out, place in a colander lined with absorbing paper, and let them drain before the fire.

**Oyster Omelets.**—Six large or twelve small oysters are sufficient. Drain them and keep the liquor. Fry out the fat from six thin slices of pork, an inch wide and two long; lay the oysters in this hot fat and shake them for a moment until the beards just begin to spread. Meantime cook in another pan, so that it will be ready just at this time, an omelet of six eggs beaten with two spoonfuls of oyster liquor, two of milk and a little pepper and salt. Fry in the usual manner, and, when just ready to fold, lift the oysters from the fat with a skimmer, lay them on the omelet, turn both edges toward the center, and transfer quickly to a hot dish. Garnish with the fried pork.

**Beefsteak, Spanish Style.**—This remarkably good and cheap dish is from the note-book of a celebrated caterer: Lay a slice of upper round steak, rather more than two inches thick, on a pie-dish, leaving on the rim of suet. Add a very little water, and baste every ten minutes for thirty minutes, baking in a moderate oven. Take it out, and cover with a layer of sliced onions; bake fifteen minutes; cover with a layer of sliced tomatoes, and bake again for fifteen minutes; sprinkle over it two tablespoonsfuls of grated cheese, and place in the oven long enough for the cheese to melt. There will be a thick, rich gravy on it deliciously flavored with the onions and tomatoes.

**French Custard Pudding.**—Mix eight well-beaten eggs with a quart of sweet cream or milk, sweeten and flavor to taste, and add a small pinch of salt. Take a deep tin mold—a perfectly smooth one is the easiest to handle—and melt a large spoonful of granulated sugar in it, taking care not to burn it; when melted make it run all over and around the inside of the mold, then put in the custard, and at once place it in a saucepan filled with boiling water deep enough to reach three-quarters up the mold, cover the mold well that no water can boil into it, and let the custard thus cook slowly until it becomes quite firm, but not longer, else it will get watery. When quite cold, turn it out on a platter, and pour a pale brown sauce over it.

Jellies and jams have become so subject to adulteration the world over that the consuming public is rather shy of them. This is an exceedingly convenient form into which to manufacture surplus fruits, however, and the production of genuine fruit, jams, preserves, etc., deserves encouragement.

## Warren Boyd's Heroism.

LOTTIE L. DOLBEAR, OHIO.

He was not a great general—the hero of a hundred battles—nor had he saved a drowning man's life at the risk of his own; nor dashed through the flames of a burning building and snatched a child from the fire and carried it to its mother's arms; nor done any of the wonderfully brave things we so often read of. He would have been very much surprised indeed if any one had called him a hero, for he was only a fourteen-year-old boy; with great, laughing, blue eyes—eyes with a world of truth in them; a round, rosy face, very much freckled; brown hair that would curl—"just like a girl's," as the boys scornfully said, sometimes; and a merry smile. And as he walked whistling down the road, barefooted, with his hands in his pockets, his school books strapped over his shoulder and his hat—a very much torn straw one—on the back of his head, he certainly did not look the least bit in the world like a hero. But we all know that to be heroic is to be brave; and there is a bravery—very different from that which risks one's life for another—but that is, none the less, true bravery. And underneath Warren's ragged hat there was a love of truth, of fairness and a kind heart, that go a long way toward making true courage.

The Willow Creek school-house, where Warren was learning what the interest is on two hundred and forty-nine dollars for one year, six months and seven days at ten per cent; and how to go by water from Odessa to Chicago, and all the other awful things that seem to be gotten up expressly to try the patience of boys, was an old, red brick building with a funny little belfry, from which a queer old cracked bell summoned the children to school. This belfry had no floor, but only a few boards placed loosely across; for that reason there was a very strict rule that no one should even go up into it. Whether the birds knew it or not, I can not say, but at any rate they built their nests there for a long time, safe from naughty boys who steal eggs; and did not seem to mind the old bell in the least. But one morning, when the teacher unlocked the door and went in, it was very plain that some one had broken the rule; for, scattered over the floor, beneath the belfry, was a tell-tale mixture of plastering, birds' nests and egg shells; while in the ceiling was a hole that looked very much as if a boy's leg might have gone through it. Under the rubbish was also found a knife, which the teacher quietly put in her pocket until needed. After the room had been cleared up and the school called to order, Miss Morris said:

"You all see that some one has been up in the belfry after birds' eggs, which you know is strictly forbidden. I am very sorry that I have a pupil who not only breaks rules but robs birds' nests; but I hope that whoever it is will be honest enough to confess it now."

There was a long silence. Everybody looked at everybody else and wondered why some one didn't speak. At last Miss Morris continued: "I am more sorry than you know, I think, to find that I have a coward in my school. I dislike to be obliged to find out for myself who it is, so I'll give you one more chance to prove yourself a brave boy, not a coward." Still no answer.

"Very well. Now I want to know how many of you boys have knives." A dozen hands were raised, and everybody wondered what was coming next. "Did any of you lend a knife yesterday?"

"Yes'm," piped a small voice from a front seat. "I lent mine to Minnie Trent to cut her name on the big beech tree."

"Well, Tommy, did she give it back to you?"

"Oh, yes'm."

"Then you all had your knives when school closed yesterday, did you?" A chorus of "yes ma'ams" answered this.

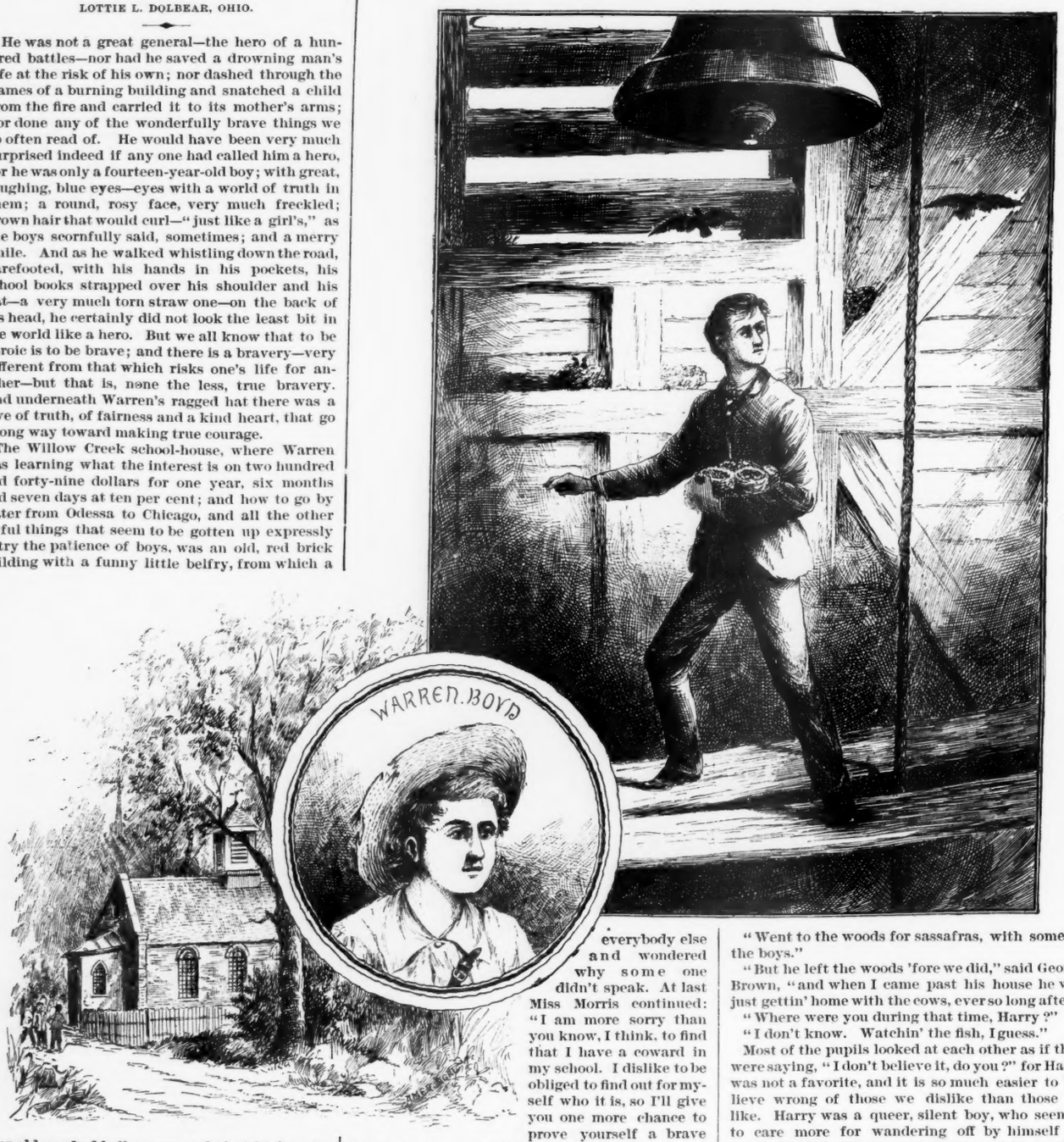
"Whose knife is this?"

All eyes were turned eagerly to see the upheld knife in the teacher's hand, and the answer came at once "Harry Crane's," and all eyes turned from the knife to its owner, a disagreeable looking boy, who appeared very much embarrassed and a little frightened.

"Harry, is this your knife?"

"Yes, ma'am; but I didn't go up to the belfry."

"Then how did your knife get there? You said you had it last night; this morning it is here. It could not come alone. Where were you after school last night?"




"Went to the woods for sassafras, with some of the boys."

"But he left the woods 'fore we did," said George Brown, "and when I came past his house he was just gettin' home with the cows, ever so long after."

"Where were you during that time, Harry?"

"I don't know. Watchin' the fish, I guess."

Most of the pupils looked at each other as if they were saying, "I don't believe it, do you?" for Harry was not a favorite, and it is so much easier to believe wrong of those we dislike than those we like. Harry was a queer, silent boy, who seemed to care more for wandering off by himself in search of birds, insects and flowers, than to play ball and go fishing with the other boys, so they were neither surprised nor sorry to have the robbing of the nests traced to him.

"Harry," said Miss Morris, "I am very sorry you would not confess that it was you. Why wouldn't you?"

"'Cause 'tain't so," sullenly.

"I wish I could believe that, but every thing is against you, and unless you can prove that you were not here last night, I am afraid I shall have to believe that you were. Can you?"

"Was here. Came back for my box of bugs, but

I didn't go up in the belfry. You needn't believe it if you don't want to, I don't care, but I ain't no liar."

"How did you get into the school-house?"

"Door wasn't locked."

"That will do, Harry. You are only making your case worse, with every word. I am positive that I locked the door, for I remember coming back to do it. You will have to pay for repairing the ceiling and stay in at recess and noons for a month."

At intermission there was an excited crowd outside, all talking at once.

"I knew 'twas him, the minute I set eyes on him," said the girl, who thought what she didn't know wasn't worth knowing.

"I said he'd come to grief some time," said the boy who always was ready to say "I told you so."

"Course 'twas him; he's always huntin' birds and such things."

"Well, I'm glad it was him, for he's no good to play ball with, nor nothin', always movin' off by himself. Come on, boys."

Three or four days passed and the matter was forgotten, except when the boys went out leaving Harry alone, but nobody pitied him. One evening, about a week later, Warren Boyd walked home with John Aften, to get a book John had promised to lend him. The two boys went up to John's room and while waiting for him to find the book on a very disorderly shelf of his closet, Warren naturally glanced around the room till his eyes lighted on quite a collection of birds' eggs. Some of them he had seen before, but among them there were now quite a number of pigeons' eggs.

"Why, John, where did you get so many pigeons' eggs?" he asked.

"Oh," said John with a start. "I forgot about those or I wouldn't have brought you—I mean—that is—I—well, it's none of your business where I got 'em," he ended confusedly.

"But there ain't any pigeon nests anywhere 'round here except in the school-house belfry—and—why, John, it wasn't you that went up there, was it?"

"Who said it was?"

"Nobody. But it looks mighty like it."

"Well, it's no affair of yours, and you needn't say anything about the eggs."

"That's as good as saying you did get 'em in the school-house."

"Well, suppose I did," doggedly.

"Why, if you did, I think—I think you are awful mean to let Harry Crane take the blame."

"Fudge! He don't care nothin' about his recess anyhow, and he's got plenty of money to pay for fixing it up, and you don't suppose I'm fool enough to tell on myself, do you, when everything's fixed up so nice?" "You see," he went on, confidentially, "I went to the school-house and opened the door with a button hook (it's awful easy when you know how), and while I was up in the belfry Harry came and found the door unlocked, just as he said, an' he got his old bug-box and went right out—only he dropped his knife—it went on that big straw rug Miss Morris has for us to clean our feet on, so he didn't hear it fall. Well, then I came down with these eggs an' went back for some more; but I came down too sudden the last time—slipped, on that plaguey narrow board, and of course my foot went through the plastering, and I dropped the eggs an' made a mess of it, and then I skipped out with what I'd got, an' there they be, waitin' for the next time Pa takes me over to Broxton with him. I got 'em for Jimmy Caryl, that lame boy, where Pa sells butter an' eggs; he's awful fond of gettin' nests and eggs and he can't climb after 'em himself an' so I got some for him, poor chap! I feel so sorry for him. An' then, you see it all turned out so nice—and you wouldn't tell on a fellow—now, would you, Warren? An' just for such a milksop as Harry Crane!"

"It's good of you to get the eggs for that lame boy, but it ain't fair to let Harry take the blame, even if we don't any of us like him."

"Well, now look here!" John dropped his coaxing tone and spoke threateningly. "If you tell you'll be sorry. Everybody hates a tell-tale; an' the boys would a heap rather have Harry shut up than me—we wouldn't be even sides at ball, if I was kept in, for he won't play, and they'll leave you out to make it even, if you tell on me. They won't have any tell-tales around, and they'll do just as I say anyhow. An' I won't let you go in my boat, an' we won't any of us speak to you nor have anything to do with you, and I'll thrash you besides. Now, will you tell?"

The two boys stood and looked at each other for a full minute, without speaking, one with a threatening look on his face, the other with an expression half of wonder, half of scorn.

"I don't want to tell, John. I hate tell-tales as bad as the rest of you, but it isn't fair to let Harry suffer for it. If Miss Morris didn't think 'twas Harry and nobody got blamed for it, I wouldn't tell, but I should think you'd tell, yourself. It's awful mean not to."

"O, shut up. I ain't that big a fool, and if you dare tell I'll make you wish you'd died a month ago."

"Here's your book; I don't want it," and without another word Warren left the room and went home.

That evening he sat so long with his elbows on the table and his face between his hands, in perfect silence, that his mother asked him what the matter was, and he told her the whole story, ending with, "You see, Mother, it's awful hard to think it all out—what to do, I mean. I hate to tell, but then, I'd hate to see Harry kept in the house for so long and know that I could get him out. And John won't tell, so I suppose I'll have to; but it's good-bye to any fun if I do, for you see the boys all like John—he is so jolly and kind, too, unless he's mad at you, and then—well, he isn't then; and he's the only boy that's got a boat, and somehow we all do just about as he says, and they all think it's so mean to tell, and they would just as lief Harry was kept in as not, and—and—O, dear, I wish I hadn't found out."

Mrs. Boyd pushed the curly hair back from the hot forehead as she said: "I don't want to advise you what to do, dear, you must decide for yourself; but it is bed-time now, so good-night, and perhaps some light will come with the morning." It was a very determined face that met Mrs. Boyd's the next day and a very sober voice that said:

"I've got to do it, Mother; it wouldn't be fair not to, you know."

"I knew you would, Warren, you didn't need Mother to help you. Be brave and it will all come out right."

Just before he reached the school-house that morning, Warren met John, who was waiting for him, anxious to find out whether he meant to tell or not. He had felt pretty safe after his many threats; sure that Warren would not give up all his own pleasure for the sake of a boy like Harry Crane, whom they all disliked so much. But he did not take into account Warren's truthfulness and his high sense of honor. So he was very much surprised, to say nothing of being angry, when Warren said:

"I'll have to do it, John, if you won't; it would be mean not to."

"Well, you will be sorry, tell-tale, see if you're not."

Warren went slowly into the school-house and told Miss Morris all about it, except John's threats.

"I am very glad you told me this, Warren; I do not like to punish a boy unjustly. I am afraid I was too hasty, and yet circumstantial evidence was all against Harry. I don't like tale-bearing a bit more than you do when it is done through a love of getting others into trouble, or because you have a grudge against some one and want to pay it off that way; but to let an innocent boy suffer for a guilty one—even if you like the guilty one the better of the two—would be most cowardly, don't you think so?"

In the meantime, John, having got the boys together was making the most of his time in creating enemies for Warren.

"What do you boys think of tell-tales?" he asked, with a sneering emphasis on the last word.

"Think they're awful mean!"

"Don't want anything to do with 'em, do you?"

"Course not."

Then John, after enlisting their sympathy for the little lame boy, told them how he had gotten into the school-house to get eggs for him and how without any help of his the blame had fallen on Harry.

"And of course," he continued, "I didn't want to tell on myself. If Miss Morris had asked if I did it I wouldn't have lied about it, but she didn't, or if it had been any of you fellows 'stead of Harry, I'd have owned up—but *Harry Crane!* the good-for-nothing! Who'd be such a fool as to tell for *him?* And then, that sneak of a Warren Boyd went home with me and went snooping 'round my room till he found the eggs, an' then when I told him about it—'course I didn't suppose he'd be so contemptible, why he up and said he'd tell. Well, I'm in for it, I reckon, but *I* wouldn't be so mean as to tell on anybody, would you? Course, you fellows can do 's you please, but I ain't going to have anything to do with him nor any of his friends." And a chorus of voices assured him that his words had had the effect he wanted and that Warren's friends would be very few; for the boys were in the habit of doing very much as John told them to. He was a natural leader and then—he owned a boat.

After this, Warren found himself left out of everything. All the fishing and boating parties went off without him. He was not wanted to play ball nor asked to join his former playmates in any sport. Most of them would not even speak to him, or only to say something unkind. And, though a few were as friendly as ever, at first, and declared that Warren did only what was right, they were *so* few and they hated Harry Crane so much and liked John (or his boat) so much, that after a little struggle they, too, went over to the majority, and left Warren more and more alone. Sometimes it seemed to him that he could not bear it, it was too unjust, and often he longed to leave school, but that he knew would worry his mother, so he said nothing about it, but went on as well as he could though it was often very hard. He tried to be patient and, at last, by degrees, but slowly, *very* slowly, he won his friends back again. They saw how mistaken they had been in thinking that what Warren had dared to do was done because he wanted John Aften punished. They even came to think—at least some of them did—that it was brave to tell the truth when it brought such unpleasant consequences upon one's self. And they found, too, that a boy, who would hide his own guilt, as John had done, was not always as pleasant a playmate as he had seemed to be, at first. And even John himself, for he was, by no means, altogether bad, grew a little ashamed of his conduct, and though he had not courage enough to say so, still he showed by his actions that he was sorry.

But these changes came only after Warren had suffered more for telling the truth than John had because the truth was told. I called him a hero. Do you think he was?

## How to Skin a Bird.

The necessary tools to work with are a sharp pen knife or scalpel (figure 1), a pair of small forceps (figure 2), a pair of scissors (figure 3), a button hook (figure 4), a narrow spoon, a spool of thread, a

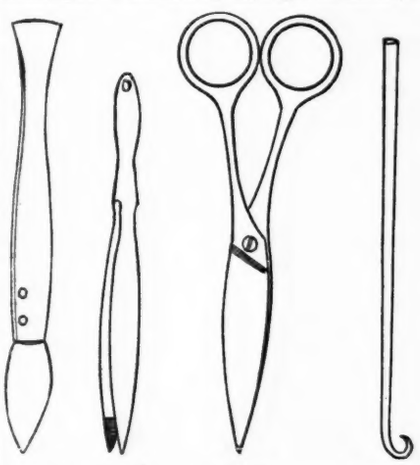


FIG. 1. FIG. 2. FIG. 3. FIG. 4.

needle, and a bottle of arsenical composition, for which the recipe will be given further on. A fair specimen being obtained, take some cotton wadding and plug up the throat and nostrils so as to prevent any flow of blood from spoiling the feathers. Take a board, lay the bird on its back and part the feathers from the insertion of the neck to the tail. Cut the outer skin the entire length, taking care not to penetrate the flesh too deeply, or through the inner membrane which covers the intestines. The skin can then be easily separated from the flesh, by passing the fingers or some blunt instrument between the skin and the body. By laying hold of one leg and pushing it forward you will be able to bring the bare knee

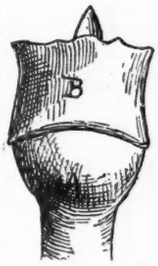



FIG. 5.

through the opening you have made. With the scissors cut it off at the joint; pull the shank still adhering to the leg till the skin is turned back as far as it will go, remove all flesh and sinew from the bone and wrap a piece of cotton wadding around it, dip it in the arsenical composition and then pull the leg by the claw back to its proper place. After having done this to both legs, skin carefully around the back, cutting off the tail, leaving it adhering to the skin with that into which the feathers grow, that is, the rump or "Pope's nose." Serve the wing-bones the same as the legs, cutting them off close to the body; next turn the skin inside out, down to the back of the skull, in which make a cut of the form shown in Figure 5; with the knife this is turned back like a trap-door, and then with the spoon clean out the brains inside well with the arsenical composition and fill it with cotton wadding.

The next operation is getting out the eyes. This is done by cutting cautiously until the lids appear, being careful not to cut the eye itself, and with a pair of forceps, which will be found generally useful, pull each from its socket. Wipe out the socket very carefully, wash thoroughly with the arsenical composition, and fill it with cotton. Cut off the neck close to the skull, wash the stump and whole of the inside of the skin with the composition, and the skinning is done.

ARSENICAL COMPOSITION.

| | |
|---|---|
| Arseniate of potash | 2 drachms. |
| Sulphate of alumina | 2 " |
| Powdered camphor | 2 " |
| White soap, powdered | ½ ounce. |
| Spirits of wine | 6 ounces. |
| Essence of thyme | 3 drops. |

The arseniate of potash, sulphate of alumina and soap are put into a large mouth bottle, and the spirits of wine poured on them at the heat of twenty-five degrees; cork and let stand twenty-four hours, then add the essence of thyme. Shake well before it is used. Do *not* use as a beverage!

## The Origin of Yankee Doodle.

Yankee Doodle, the lively tune that during the Revolution became our national air, is well-known by all Americans, and is sung, played and whistled to high and low, old and young; but comparatively few, perhaps, are aware of the way in which it originated. Long ago in Colonial times, the tune was a favorite New England jig, and called "Lydia Fisher," impromptu verses being frequently set to it, one of the most popular being:

"Lydia Locket lost her pocket,
Lydia Fisher found it;
Not a bit of money in it,
Only binding round it!"

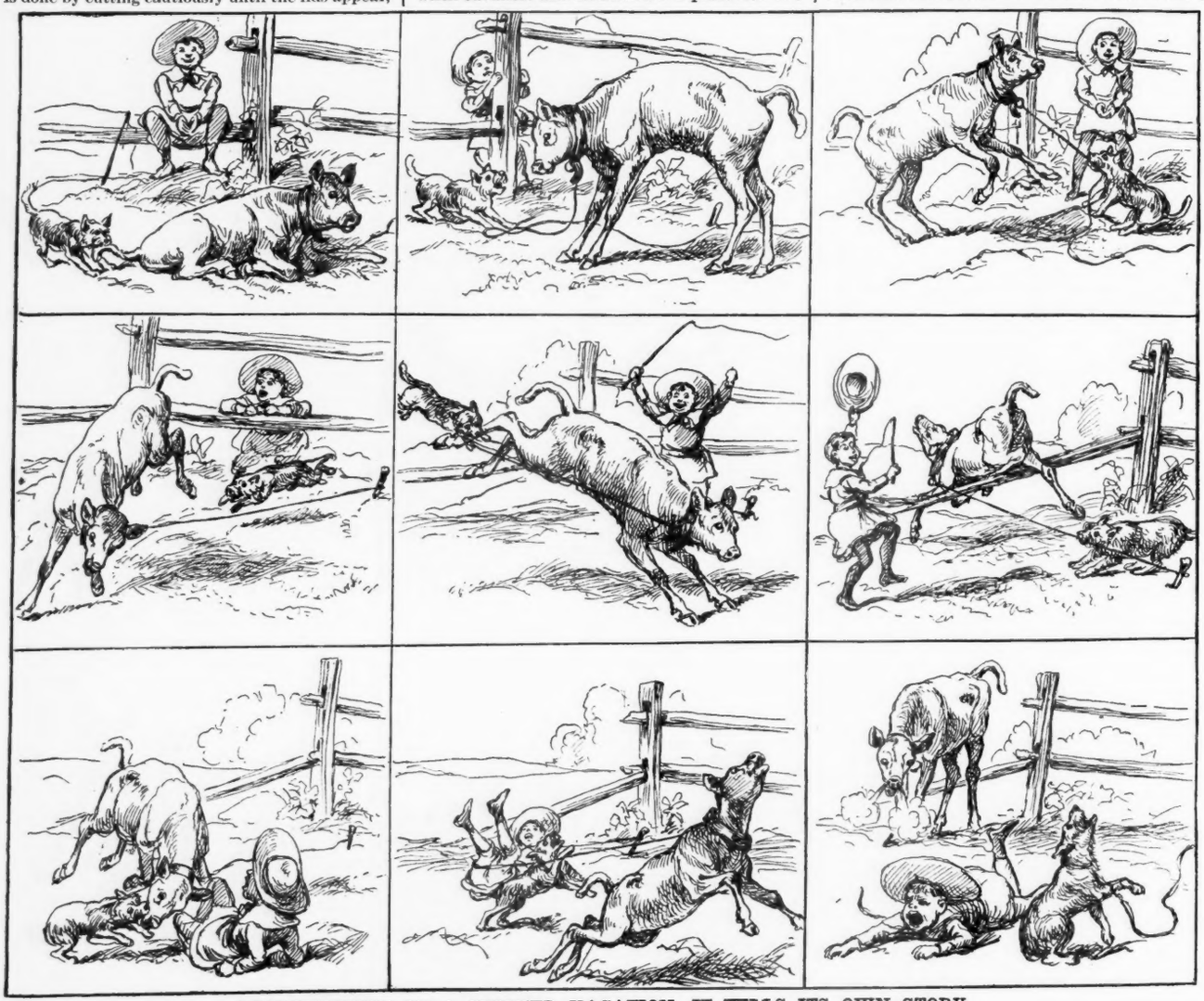
But still further back in old England, in the time when Cavaliers and Roundheads represented two opposing parties, the term "Yankee Doodle" was applied to Oliver Cromwell, and in a collection of songs entitled "Musical Antiquities of England," are given these words:

"Yankee Doodle came to town,
Upon a little pony,
With a feather in his hat,
Upon a macaroni," etc.

The lines apply to Cromwell's riding into Oxford on a small horse, with a single plume fastened in a knot, then called a "macaroni." When we observe the strong resemblance between this verse and the one so familiar to us, we cannot doubt that one gave rise to the other, particularly when we remember that the early New England Puritans delighted to call themselves "Oliver Cromwell's children." "Yankee"—derived from *Yengee*, the Indian name for "English"—easily took the place of "Nankee" in the mouths of the British royalists, who applied it as a term of contempt to all New Englanders; and when, as the strife was engendering at Boston, the colonists secretly conveyed muskets out into the country concealed in loads of manure, the Tories scornfully sang to the old air of "Lydia Fisher,"

"Yankee Doodle came to town,
For to buy a firelock;
We will tar and feather him,
And so we will John Hancock."

But the New England men were as bright and ready then as they are now, and cleverly turned the tables on their enemies. When the battles of Concord and Lexington began the war, the British troops marched forth in martial array, triumphantly playing "God Save the King"; but when the Americans had made the retreat so disastrous to the invaders, they tauntingly struck up the despised "Yankee Doodle," as though they would say, "See what we simple Jonathans can do!" and from that time the term of derision became one of pride. The tune was adopted throughout all the American colonies as the national air of the "Sons of Liberty," and has so remained to the present day.



REMINISCENCE OF A SUMMER VACATION—IT TELLS ITS OWN STORY.

**A Good Drawing.**—Jasper Blines, a self-taught boy of Clark Co., Mo., sends us a remarkably neat and accurate original drawing of a harvest fly (*Cicada pruinosa*). The drawing shows close observation as well as artistic skill. One of the most distinguished entomologists of this country was first led to habits of close study of insect life by his practice of making drawings of such as interested him. Our young friend in Missouri will do well to keep up this practice.

The AMERICAN AGRICULTURIST is the oldest and most influential farming paper in America. —*Spencer* (Mass.) *Sun.*

# FROM NEAR AND FAR.

## Crops in New Jersey.

Farmers in this State have had little reason for complaint the present season. With frequent and abundant rains farm crops generally have done well. Early potatoes gave good returns, both yield and price having been far above the average. The crop all through July found ready sale at from $3 to $3.50, and in some cases at $4 per barrel of three bushels. The usual price at that season is generally about $1 lower; but the crop at $2 to $3, with good management, can be made a very profitable one. With all potatoes this season, atmospheric conditions seem to have favored top-growth, and in case of the late crop, I fear, at the expense of tuber. The cucumber flea-beetle is reported to have done much damage to late potatoes north of us. Here I saw no sign of the pest. In many cases the tips of leaves turned brown, as if scorched by fire, and the vines, after a short struggle, finally succumbed. What the cause is I do not know. Corn is a good crop. We have this year next to no pears, few plums, some peaches and apples, in short no large crop of any kind of tree fruit. Grapes are largely injured if not ruined by mildew and black rot, which disease, it seems, has come to stay. Garden crops were generally very fine, owing to this most propitious season, although celery during the heat of August suffered badly by blight. A cool wave and plenty of rain afforded relief from this scourge, and the plants made a new and vigorous start. Tomatoes were abundant. The canneries are now in full blast, and take the beautiful fruit, mostly Perfection, Favorite, and similar (almost identical) sorts, at twenty-five cents per bushel, or $8 per ton. Large fields are planted with this crop, and under good average management the gross receipts will amount to from $75 to $80 per acre. This is better than corn, wheat or any other cereal at present prices. Sweet corn is always in good demand at fair prices, and is readily salable at the stores. I have never heard of an over-supply, but often of an unsupplied demand. Lima beans, and in the earlier part of the season, peas, always find willing customers at paying prices. This county offers superior advantages for skilled poultry raisers and keepers, since chickens and eggs are always in demand, and prices rule considerably higher than those in the New York city market.

T. GREINER, Monmouth County, N. J.

## Agriculture in India.

Agriculture is not a matter of choice as in other countries. The Hindoo agriculturist is born to the business, the caste system of India requiring that the son shall follow the profession or calling of his father. The Hindoo agriculturist is the poorest man in the country. The lands are in the hands of a few rich rajahs, who lease them out to the ryots on the agreement that three-fourths of the produce shall go to the rajah, the farmer retaining the remaining one-fourth. The farmer has little money with which to work his lands, and in a short time finds himself in debt to the rajah, who ever after makes a serf of him, denying him even the liberty of his person. The English government has done little to elevate the hard lot of the Hindoo ryot. The principal crops which India now raises for the markets of foreign countries are wheat, rice and fruits. Indian rice is to be found in every seaport of Europe. Wheat has within recent years become an important article of export. The methods of raising wheat are exceedingly rude and primitive. During the rains of June and July the land is scratched over repeatedly by little wooden ploughs drawn by the small bullocks of the country, and the seed sown late in autumn. The wheat ripens in spring, and reaping begins in April and continues until the end of May. A small reaping hook is used with which five men will cut down about an acre in a day. The usual pay is four annas [about 12 cents] and five sheaves of wheat per day. The threshing is done either by driving bullocks over it to tread it out or by the use of a *phalha* or rude threshing instrument drawn over the grain by two bullocks. The threshing floor is a piece of ground smoothed and pounded down hard. A *phalha* with two bullocks, a driver and two men to throw back the straw into the heap, will thresh the crop of a quarter of an acre in a day. The grain becomes very much mixed with dirt. The winnowing is done by throwing up the threshed straw, chaff and grain repeatedly into the wind, and when it has become partially separated the grain is sifted by hand. The grain is stored in large, unbaked earthen jars called *kalotis*. If it is desired to hold it long, it is mixed with the ashes of cowdung to protect it from weevil. One of the most notable signs of the times is the introduction, in a very limited way, of improved implements. A few years ago one hundred plows were imported from the United States. They were of the smallest pattern used there, so as to be adapted to the strength of the native cattle. Several European and native proprietors have recently started a steam threshing company, with four machines to begin with.

P. J. LACKERSTEEN, Calcutta, India.

## Borrowing Money in Dakota.

Many who came here with little means, after spending what they brought with them, endeavored to comply with the law and at the same time earn their support by working for others. Finding it difficult to make the final payment for their land, they have concluded to "prove up," borrow enough to pay the Government for the land and with the remainder purchase a team and go to work. An agent is found who offers to obtain a loan; terms, ten per cent to the borrower and five per cent bonus to the agent for negotiating the loan. Four hundred dollars is the most that can be obtained on a single claim. The pre-emptor puts in his proof, the agent pays the $1.25 per acre, holds the receipt and makes a settlement with the borrower something as follows:

| | |
|---|---|
| Paid for land | $200 |
| First year's interest in advance, 10 per cent. | 40 |
| Bonus for negotiating loan, 5 per cent | 20 |
| Advertising | 5 |
| Fees | 10 |
| Total | $275 |

After the proof is accepted he is handed $125—all that remains—and with this he endeavors to begin farming, but he finds new difficulties. Seeders, harrows, binders, etc., thrust themselves on his notice as things he cannot do without. He can purchase on time, and mortgage his team, crops, wagon, etc., in hopes that the one hundred acres he will have in will pay all off. After harvest the grain is threshed, and he takes a reckoning of how he stands:

ASSETS.

| | |
|---|---|
| His 100 acres turning out 16 bu. per acre and selling at 67 cents per bu. will realize | $1072 |

LIABILITIES.

| | |
|---|---|
| Household expenses for the year | $300 |
| A hired man eight months at $20 | 160 |
| Machine threshing at 4 cents | 60 |
| Twelve hands required at $2 | 24 |
| Seed for 100 acres | 75 |
| Sharpening plows and other blacksmith work | 15 |
| Binder (note) | 100 |
| Drill | 55 |
| Two hundred lbs. of twine | 32 |
| Total | $821 |
| Balance remaining | $251 |

No one who has attempted to open a prairie farm will think the above an unfair statement of what may be the showing of the third season on the farm for those who came in and expended their all in buildings, team, and the excess of expenses over the first crop. Nothing is allowed for sickness, which comes here as well as elsewhere and is even more expensive; nothing for losses in stock, and it is the exception rather than the rule that a settler has not one or more horses die on his hands before they get acclimated.

JAMES C. GIBSON, Benson Co., Dakota.

## New Crops in Texas.

A new impetus is being given to the agricultural interests in many parts of Texas by the introduction of several new products and improved methods of cultivating and manipulating others. There are millions of acres of land in Texas that are especially well adapted to the growth of ramee, jute and sorghum—three of the most important new crops in this State. Sorghum is not new with us, but since the recent experiments at Fort Scott, Kansas, in making sugar from this plant by the diffusion process, it promises to become a leading crop in the Lone Star State. It is easily raised, and on Texas prairie land yields a large return; in much of the State two crops a year can be raised on the same ground, averaging from 1,000 to 1,500 pounds of sugar to the acre from each crop. The average is about one hundred pounds of sugar and fifteen gallons of syrup to the ton of cane.

Jute is also a good crop for a dry country, as may be seen from the fact that nearly all of our supply of bagging for baling cotton, comes from India. We can just as well as not raise enough jute in Texas to supply the American continent if necessary, and at a fair profit. A company has recently been organized in Parker Co., Texas, for manufacturing cordage from jute. A Texas inventor recently perfected and patented a decorticator, which will greatly assist in popularizing this crop in the South. Years of patient experiment by Prof. Fremerery and others have fully demonstrated that we can produce much better fibers than India, and the Texas Ramee Planting Association has organized to fully establish this new agricultural product as a leading Texas commodity.

Another crop that is gaining favor in Texas is the castor bean. It is now being quite extensively raised in some of our western counties and seems to be a paying crop.

T. B. BALDWIN, Harrison Co., Texas.

## Cheese and Rennets in France.

There is no country in the world where the cheese business has reached a higher point than here in France. In the general market, or Halles de Paris, are to be found forty different kinds of cheeses, all of a superior quality, and in a size and form varying from an American silver dollar to that of a sandwich, a pancake, a tobacco-roll, progressively up to the common American forms of Stilton, Chester and Cheddar, in wood boxes of about forty, fifty and sixty pounds each. Among the most prominent and popular cheeses at present in the market are, de Brie, Roquefort, Camembert, Neufchatel, Mont d'Or, Pont l'Eveque, Gerome, Munster Livarot, Gex, Sept Moneel, Sassenage, Mont Lesses, Gorgon Zole, Port du Salut, de la Provence, beside the well-made imitations of such foreign cheeses as Parmesan, Reggian, Strachina of Italy, Emmenthal and Gruyere of Switzerland, Edamer and Cantal of Holland, and the well-known Chester, Stilton and Cheddar, produced in England, Denmark, Sweden and the United States of America. In so rich and fertile a country as the United States, where the dairy business has attained in many parts of the country the highest point, it seems to me they have too few kinds of cheeses of the really finest and highest quality. The French production of cheeses for export is increasing yearly. The French export their cheeses as delicacies to all parts of the world. They are recognized as such, but of such a kind that every citizen of the French Republic can afford to have them at all times on his table.

French superiority in the cheese business is the result, aside from the skillful management of the curd, of the proper cleaning, drying and preparation of the rennets. Everybody knows that an extract prepared from sheep's rennets gives the curd another taste and smell from that produced by an extract from calves' or hogs' stomachs. Each of these gives the coagulated casein a different character and quality. Here in France they also clean, dry and prepare calves' rennets in the most careful and scientific manner, and in large factories by means invented for that purpose. The different methods in which the French prepare the curd for making different qualities and kinds of cheese, are not difficult to learn; but the rennets, for curdling the milk, must be so well cleaned that they will not give a bad flavor to the cheese. Paris has, including the many small towns outside of the limits or in the rear of the fortifications, about four million inhabitants, creating an immense consumption of veal, and here are also the largest abattoirs in the world for killing calves. Many million rennets a year thus become available for creameries and cheese factories, and for export to foreign countries, in the form of liquid rennet extract, and the so-called rennet powder, which is a kind of dried salt in boxes, in which the active principle for curdling the milk is contained.

AUG. HESSELMAN, Paris, France.

## From the Northwest Corner.

In Skagit County, in the northern part of the Territory, our land is hard to clear, but when subdued is productive, yielding from two and a half to four tons of hay per acre, and eighty to one hundred bushels of oats. The winters are mild and the summers cool, making this section particularly adapted to stock raising. I began five years ago with one cow, for which I paid $30. Last summer I sold a steer for that money and now have four cows and five other head. One heifer, twenty-six months old, gives four gallons of milk a day on grass alone, and nearly comes up to some of the fancy Eastern stock.

WILLIAM WOODS, Sedro, Wash. Ter.

# OUR BASKET.

**Improved Feeding Trough for Hogs.**—Samuel W. Stewart, Newcastle Co., Delaware, writes: The usual form of a spout through which to pour slops into a pig-trough is objectionable. The master hogs place themselves next to it and get most of the feed, while they keep the rest away. I have used a better device for several years. It is a board extending the entire length of the trough and set above it, projecting through the side of the pen at an angle of forty-five or fifty degrees, and securely fastened both to the side of the pen and to the top of the trough. This gives access from the outside to all parts of the trough, the latter having transverse slats or iron bars nailed across the top, a foot apart, to keep the hogs from getting into it lengthwise.

**Bark of Trees Cracking.**—C. Worthington, Brockville, Ont.: In all cold climates the bark on young fruit trees often breaks loose from the wood and cracks open in winter. This is supposed to be caused by the freezing of the unassimilated or watery portions of the sap. It is well known that as water becomes ice it swells, and that the ice occupies a much larger space than the water before congealing. This is one of the various attempts to explain the phenomenon of bursted barks on fruit trees. Some observers claim that it is not the expansion of the water or sap in the tree that causes the bark to crack open, but that it is due to sudden changes of temperature in winter, and that the bark is suddenly expanded by the heat from the direct rays of the sun, and that the cracks always appear on the south or southwest side of the stem, and to prevent it we have only to wrap the stems with cloth or bark in the fall as a kind of protection, removing these wrappings in the spring. We hope you will try some protective system and report the results for the benefit of our numerous readers who reside in cold climates.

**Best Timber Trees for Utah.**—H. J. Sears, Weber Co., Utah, wants to know what kind of timber will be most profitable to raise in Utah on sandy loam irrigated by flowing wells. If we could look into the future and determine what kind of wood is to be in the greatest demand in Utah thirty or forty years hence, it would not be difficult to name the most profitable species to plant at the present time. Under the circumstances we think one would make no mistake by planting white ash, locust, hard maple, and perhaps silver maple; the latter is a very rapid grower, and the wood is valuable for fuel, cabinet work and the inside finishings of dwellings. If you are not familiar with the usual mode of handling the seeds of such trees you will find that purchasing the young one-year-old seedlings the most certain and profitable course to pursue. There are many nurserymen who make a specialty of raising forest-tree seedlings, and as they raise them in such immense quantities they can afford to sell them at a profit of a few cents per hundred or even per thousand. By consulting our advertising pages you can obtain the address of the most extensive growers of such plants.

**Leaf Blight.**—W. A. Schuler, Lehigh Co., Pa., writes us: "In our vicinity many fruit trees and grapevines suffer from blight which causes the leaves to turn brown, and frequently to wither away entirely. I have an apricot tree which is now getting its third growth of leaves this summer, the two previous ones having dried up altogether. The cause of this state of things is believed to be found in the sulphurous vapors arising from neighboring brick yards. Is there any remedy for this evil?" The sulphurous vapors arising from the brick kilns in your neighborhood may be injurious to the foliage of your grapevines and fruit trees, burning and causing the young and tender leaves to turn brown and die. Still various forms of twig and leaf blights prevail and are more or less destructive to vines and fruit trees in regions far removed from brick kilns and manufactories where coal is used for fuel. Some thirty years ago when the Isabella and Catawba were about the only varieties of the grape cultivated in the valley of the Hudson, the black rot appeared, and the leaves were also badly affected with mildew, and in seeking for a cause it was quite natural for the vineyardists to attribute it to sulphurous gases from the brick kilns in the neighborhood. But these diseases of the vine were both common and widely distributed in the Eastern and Middle States a hundred years ago, as we learn from the earlier works on grape culture. The loss of the leaves on your apricot may be due to what is called "sun scald," the great heat and direct rays of the sun burning the foliage. Many kinds of European trees suffer in the same way in this country, and we now have several specimens of English hawthorns on which there is not a leaf—all destroyed by the high temperature to which they have been subjected the present summer. New leaves appear only to be burned and destroyed by the sun.

**Mississippi's Mistake.**—The remarks of the August AMERICAN AGRICULTURIST upon the small appropriations for the Mississippi Agricultural College and the proposed tax on creameries in that State have been widely quoted and favorably commented upon by the Southern press. The *Clarion-Ledger* of Jackson, one of the representative journals of Mississippi, remarks: "The article strikes the right chord, for its writer knows by the experience that has been had in the Northern and Western States what brings the much desired immigration. There is little doubt that the next Legislature will correct the mistakes made by the last one. The effect of the niggardly appropriations is already being seen and will be seriously felt by the farmers of the State. Mississippi can ill afford to lose such educators as Lipscomb, Myers and Jones, and it will be a long time before the A. & M., and the I. I. & C. will recover their loss. Other good and true men may be found, but none will ever be found who had more of the good will of Mississippians or Mississippi's interest at heart."

**What Ails the Minister's Hens?**—Rev. J. O. C. Nellis, Livingston Co., N. Y., writes us: "In an experience of over twenty years as an amateur, I have always found poultry keeping profitable. Until this season I have been exceptionally free from losses by disease. I have lately had a perplexing and unaccountable experience. Can any of your correspondents tell me what ails my hens? I had twenty-three fine pullets and several cockerels. The earlier pullets began to lay, and in a few weeks one was found dead. At intervals of three, six and eight weeks one or two more died. There is no apparent cause—no clue or indication. No cockerel has died. The pullets generally died after laying out a clutch and wanting to sit. They seemed healthy, had red combs, good condition, until two or three days after they were confined to break them of sitting, when we found them dead. Others of them have begun by inactivity, standing about dumpish, purple comb, not eating well, until two weeks, when they refused food and died. I began to feed for laying the same as I have for twenty years, adding pepper, ginger and other stimulants to their food. I have thought they might have been forced to over-production, and consequent exhaustion, but three which I set came off vigorous with chicks strong. There is no vermin, no dampness, and they have careful attention. The nine remaining look finely and lay right along."

**The National Farmers' Alliance** will meet in annual convention at Meridian, Miss., on the second Wednesday in October. Railroad rates for the round trip will be one and one-third of the regular fares. Each State is entitled to one delegate or one vote for each four counties organized. The convention promises to be a large and important one, as the order now has 362,970 members, including 42,496 women, and State Alliances are now organized in Texas, Louisiana, Arkansas, Mississippi, Alabama, Georgia, Tennessee, South Carolina, North Carolina, Missouri, Kentucky, Arizona, New Mexico and Virginia. It is hoped to effect a permanent union with the Agricultural Wheel, an organization that is especially strong in Kentucky, Tennessee and Missouri. Delegates will also be present from the Farmers' Alliance of the Northwest, a separate organization that is strong in Illinois, Minnesota, Iowa, Nebraska and Dakota. E. B. Warren, of Dallas, Texas, is secretary of the National Alliance.

**The Perfect Grape.**—Mr. E. W. Bull, the originator of the Concord, writes in a private note: "I do not think the acme is yet reached in the grape. Prof. Agassiz predicted that we should have better grapes than the French. 'Ours are delicate,' said he, 'but theirs are rich.' The perfect grape for the North will probably come out of the Concord stock. Who will reach the honor? You will see it, but I shall not."

**A Troublesome Grass.**—Eli E. Schock, Stephenson Co., Ill., sends us a specimen of a grass that he has in vain tried to kill. He finds it only on his farm, where there was once a pioneer's cabin, built by a settler from Vermont, and it is thought that he introduced it. Mr. Schock wishes to kill it to prevent it from spreading to other farms. The grass is *Triticum repens*, known as "Quack," "Quitch," "Twitch," "Couch," and by many other names, under all of which it is one of the most persistent weeds and difficult to exterminate. Thorough plowing and the use of a rake with very long teeth, made for the purpose, will take out a large share of the roots; this is then followed by a hoed crop, and the treatment continued as long as any of the grass remains. It has succeeded, and we know of no other method that will destroy this pest.

**Alsike Clover.**—James H. Payne, Washington Co., Arkansas: Alsike clover differs little from red in its tendency to produce hoven or bloat in cattle, if they are turned upon a rank growth of it and allowed to fill themselves without restraint. Alsike when well established will stand close pasturing and hold its own against any other vegetation except a few of the most aggressive grasses.

**An Enterprising Young Farmer.**—Charles Cox, Morgan Co., Ill., writes us: "I am twenty-three years old and own two farms, one of 176 and the other of 130 acres, just eighty rods apart, and all under cultivation, exeept fifty acres of nice young timber. I have fourteen horses, draft and roadsters, and thirty-five grade Shorthorn cows and heifers. I am selling off my hogs and shall stock up with pure-bred Berkshires. My chickens are all high-bred Plymouth Rocks. I am a subscriber to fifteen periodicals at an annual cost of about twenty-five dollars, and the AMERICAN AGRICULTURIST is second to none. Now I wish to ask you frankly, does it pay to take so many good publications?" Bacon says "reading maketh a full man." If one reads all that he can "mark and inwardly digest," he not only keeps abreast of the age, but also learns to take broader and more comprehensive views of things in general. Any one of the really good publications in the list may contain a suggestion or announce a fact that will be worth in actual money value the annual price of the whole list. The farmers that read good, live publications are not the ones who are swindled by the various humbugs with which the country is infested.

**Plant from Oregon.**—T. F. J. Brentano, Marion Co., Oregon, found in the fir woods a plant that much interests him, especially on account of the absence of color, it being waxy white throughout. The stem, from three to eight inches high, bears a single large flower at the top where it curves over, and by its form suggests the common name, "Indian Pipe." When it first comes up it is pure white, but on drying or decaying it turns black. The botanical name, which our correspondent asks for, is *Monotropa uniflora*. It grows upon decaying vegetable matter after the manner of a fungus. Though this plant excites much surprise, on account of its weird appearance, it is quite common, being found in rich woods in nearly all parts of the country. It has no well authenticated uses, though the herb doctors call it "Fit Plant."

**The Michigan Experiment Station** has undertaken a problem of much practical interest in establishing an experiment farm at Grayling, Crawford Co., in the heart of the so-called jack pine lands. The soil in that region is very thin, sandy and unproductive—a veritable pine sand plain. Many settlers have struggled for years to make farming profitable on these lands, but with indifferent results. Many of them have moved away,

after years of unsatisfactory work. The land is very porous as well as sandy, subject to late and early frosts, liable to midsummer drought, and there are no fertilizers available, except marl, salt and plaster, other than the stable manure that is to be made from the crops grown on the soil. The methods which it is proposed to experiment with in this region are detailed in Bulletin 37 from the Michigan station. The experiments may finally show no practical means of working this land at a profit, but even this result would be worth something in indicating that would-be settlers need not waste their energy and money on such soil.

**Rabbit Pest in Arkansas.**—An Arkansas subscriber writes that Washington County is so overrun with rabbits that boys could make money in catching them at five cents a head. They have proved terribly destructive to apple and other fruit trees, grain fields and gardens, in spite of the numerous sportsmen and dogs which abound there.

**Bermuda Grass in Oregon.**—E. W. Hartley, Marion Co., Oregon, asks whether "Bermuda grass" is worth sowing for pasture, and, if he wished to change from pasture to wheat, whether the grass could be readily subdued. "Bermuda grass" (*Cynodon dactylon*) is a grass of warm climates, and while it is of the greatest value in the Southern States the reports from our Middle and Northern States are such as should not lead us to expect much from it in Oregon. If there have been no trials with the grass in your State, it may be well to make one on a small scale. If it proves to be of value, you will have a stock for a larger planting, as it is propagated by cutting up the sods and sowing the pieces in drills. It rarely perfects seed in this country, but our dealers have recently offered seeds from abroad. What success has followed the use of these seeds we have not yet learned. Will some who have sown them please report? Bermuda grass has such a fine and scanty herbage that there should be many grasses superior to it for pasturage in Oregon, even if the climate were favorable to that.

**Sales of Public Lands** show the rapidity with which the newer sections of the West are being settled. These sales from 1862 until 1881 averaged only about $4,000,000 a year. In 1884 there was an influx of settlers who bought about ten million dollars' worth of land. Then the sales declined one-half for two years, but in 1886 began to rise, and in 1887 reached the enormous sum of $11,000,000.

**In the Present Century** no other agricultural system has had such rapid and successful development in England as ensilage. Where five years ago the practice was unknown, it had been carried out in 1887 in 2,700 silos and in probably 1,300 stacks. The reports for 1888 will probably show a total of nearly 5,000 silos and ensilage stacks in England alone. There is a growing opinion that stacks are preferable to silos in that country.

**The Emigration from European Countries** continues heavy, the largest percentage coming from Norway, as is shown by the following table, which indicates the number who have emigrated out of every 100,000 inhabitants:

| FROM | 1882. | 1883. | 1884. | 1885. | 1886. | 1887. |
|---|---|---|---|---|---|---|
| Germany | 425 | 362 | 310 | 222 | 164 | 218 |
| Switzerland | 379 | 441 | 309 | 202 | 178 | 195 |
| Italy | 238 | 245 | 205 | 269 | 294 | 272 |
| Gt. Britain & Ireland | 792 | 899 | 673 | 572 | 634 | 653 |
| Denmark | 578 | 413 | 311 | 210 | 303 | 318 |
| Norway | 1,504 | 1,160 | 771 | 724 | 711 | 729 |
| Sweden | 975 | 566 | 389 | 398 | 409 | 423 |

Most of these emigrants come to America. The immigration is greater at present than in any year since 1882.

**Dairy Farming in Pennsylvania.**—Cyrus E. Work, Indiana Co., Pa., writes us that he has sixty acres in a section where farming as conducted generally "does not pay." There is a creamery within five miles which pays twelve cents an inch for cream. He is uncertain whether to turn his attention to dairying or sheep raising. In reply we have to state that dairying is one of the most successful branches of agriculture in the region indicated by our correspondent. If he will begin with a small herd of choice cows, and a good Jersey or Guernsey bull, raising his heifer calves until he has at least thirty cows, his sixty acres can be made to support them, by the use of the silo and moderate purchases of bran or other feeding stuff during a part of the year. Meantime a small flock of "native" ewes and a ram of any good mutton breed will bring lambs which can be turned off in the fall at top prices. The sheep can be sold off as the dairy herd increases. Such a course will steadily increase the fertility of the farm, and bring more money than usual crops.

**Steam Manure Spreader Wanted.**—C. G. Shenk, Dauphin Co., Pa., writes us: "We are through with the hard work of the season, hay-making, harvesting wheat and oats, and last, though not least, hauling the manure (one hundred and seven six-horse loads) on the oat stubbles for wheat. For hay-making and harvesting we have machinery, but this manure loading and spreading makes heavy work on a farm where from fifty to sixty acres are put in wheat, forty in corn and forty in oats with small lots of potatoes, onions, turnips, etc., and where fifty or sixty head of cattle are fed, besides hogs, poultry, etc., which also add to the manure pile. It is a pleasure for my three boys to keep on plowing until they have plowed the oat stubble and then the corn stubble, to sow to wheat. I have tried harrowing alone but with poor results. Running the mower and binder, pitching sheaves and hay give healthier and more useful pleasure than picnics. Then we blow the sheaves through a steam-power thresher before the boys begin to go to school and to teach. Cannot some one's ingenuity devise a plan of loading, hauling and spreading manure by steam?" If our correspondent will try Kemp's manure spreader, we think he will cease to call for a steam device for doing the work. With two horses, it reduces the manure to a fine condition and scatters it uniformly over the ground in any desired amount per acre.

**Ensilage.**—John Gardner, Harrison Co., Iowa: The sunken silo of stone or brick has become obsolete, as has also the method of filling as rapidly as possible, and then weighting down heavily. The wood silo, filled so slowly as to drive out the fermentive bacteria has wholly superseded the old method. The article on "Ensilage" by John Gould on another page of this number gives full particulars of the latest approved methods.

**Draining a Low Meadow.**—Subscriber, "Ivy Lodge Farm:" Your meadow of fifteen acres bordering on a brook which seldom overflows, may be profitably drained by tiling. Two inches of fall would be sufficient. We should put in the drains this fall, break it up and plant to corn or other hoed crop next spring, and the ensuing year seed it to oats with grass and clover. A mixture of orchard grass, meadow fescue and red-top would make a denser growth than any one alone. Alsike clover is admirably adapted to just such low situations. It yields well, is not liable to heave out by frost, and is perennial.

**Fine Prospects in Iowa.**—L. S. Coffin, Fort Dodge, Iowa, writing to the AMERICAN AGRICULTURIST Sept. 1, says: "The oat crop over at least half of the State is a total failure, owing to storms and rust. The growth of grass and corn is simply enormous, but corn is late. We should have at least three weeks of good weather to mature it. With such weather, we shall have the biggest corn crop Iowa ever had. But little wheat is raised, and aside from the wheat and oat crop, all else is wonderfully good. Pastures are grand and cattle fat. Dairying is of course good. Iowa is the grandest of all the States. I have been on this farm for 33 years, and last year was the nearest to a failure of crop for all that time."

**Additional Fairs in October.**—Delaware County, Penn., at Elwyn, Oct. 4-6; Brown County, Ohio, at Georgetown, Oct. 2-5; Hillsdale County, Mich., at Hillsdale, Oct. 2-5; Shenandoah County, Va., at Woodstock, Oct. 2-5.

**American Apples in England.**—The latest cable reports received from J. C. Houghton & Co., Liverpool, inform us that the American apples received by steamers Britannic, Wisconsin and Etruria did not arrive in very good condition. Some of the fruit did not carry well, and buyers objected to some lots because they were too small. Sound apples realized the following prices: Kings, $4.80 to $5.76; Blush, $4.32 to $5.04; Baldwins, $2.88 to $3.30; Greenings, $2.40 to $2.76.

**An Editor Nominated.**—W. D. Hoard, of Fort Atkinson, Wis., has received the Republican nomination for Governor of the State, and is morally certain of election. Mr. Hoard has long been actively identified with the dairy and agricultural interests of the country as the editor of a dairy paper, and a vigorous worker in all movements to promote agricultural progress.

**A High-Priced Dog.**—The famous St. Bernard dog "Plinlimmon," of which a sketch and portrait were published in the AMERICAN AGRICULTURIST of June, 1886, was recently bought by J. K. Emmet, the actor, for five thousand dollars. He was born in Leeds, England, and had changed owners twice before at prices which were considered as almost fabulous, but they were less than that paid by Mr. Emmet. The *North British Agriculturist* says of this famous dog: "'Plinlimmon' is now five years old, and has never been beat but once, and that was regarded as a mistake. 'Plinlimmon' was the admiration of the neighborhood at his late home in Leeds, and when he was taken away the scene is said to have been really affecting. As the news gradually spread friends came round to have a parting look at him. Children were brought in to shake hands the last time with 'Old Plin.' Soon the whole neighborhood was alive as it became generally known, and the levee had to be transferred to the street, where the people crowded round the grand animal and his new master seated in the carriage. He is now in London with his new master, and is to take part in the performance of 'Fritz.'"

**Haas, Wealthy, and Ben Davis Apples.**—George W. Beebe, New Westminster, Province B. C.: The Haas apple is large, roundish, slightly conical, splashed, mottled, and shaded with light red, many dots; flesh white, fine grained, juicy, subacid, good to very good; season, November to March. The Wealthy is medium, roundish, oblate, whitish yellow, shaded with crimson, flesh white, fine grained, stained with red, tender, juicy, subacid; very good; season, December to February. Ben Davis is medium to large, roundish; color, yellowish, splashed and striped with two shades of red; dotted, flesh white, tender, moderately juicy, pleasant acid, good to very good; season, December to March.

**Eradicating Artichokes.**—R. Baker, Jr., Dubuque Co., Iowa: Wild artichokes may become very troublesome. The surer way to destroy them would be to summer-fallow the ground. If they are not very numerous seeding down the field to clover might destroy them.

**Reclaiming Swamp Land.**—H. S. Pratt, Plymouth Co., Mass., has a piece of swamp land with muck from four to ten feet deep, and desires information whether he will have to cart on sand or gravel to lay down to grass. Most of such land, when properly drained, will make excellent meadows without addition of sand or gravel. There are instances, however, in which the muck is so destitute of mineral matter that an addition of clay or sand becomes necessary. This is an expensive operation though, and we would advise to try seeding down a part of the ground. Then await the results, and report.

**Sweet Potatoes on Clay Land.**—A. C. Bates, Park Co., Ind., writes that it is generally considered that a light sandy soil only is fit for sweet potatoes, but this year he planted them on a slope of a hill-side to the north, on yellow clay soil. He had sweet potatoes in abundance and of good quality, equal to any he has ever grown in light sandy soil. "Perhaps," he says, "we have all failed to treat the sweet potato to its best soil, and on this same clay soil I have had the finest crop of tomatoes I have ever raised in an experience of twenty-five years."

**Postage on Seeds to Australia.**—Frank Eley, Otago, New Zealand: The postage to New Zealand on samples (only) is four cents for 8¾ ounces.

**Best Season for Planting Trees.**—Mrs. I. N. Cole, Orleans Co., N. Y.: Trees may be planted either in the fall or in the spring. If the soil is dry and in proper condition there is a gain by planting trees in the fall. Otherwise, spring is preferable, especially so for evergreens of all kinds, which do not succeed well by planting in the fall. But even when trees are to be planted in the spring it is best to procure them in the fall, and heel-in ready for spring planting.

AMERICAN AGRICULTURIST
FOUNDED IN 1842

OCTOBER, 1888.

## A Mile-Stone.

The September issue of the AMERICAN AGRICULTURIST bore on its title-page the words, "Whole number 500," and this issue begins the second half of the millenary series. Few, indeed, are the monthly periodicals which can point to a past of like duration, and that of the AMERICAN AGRICULTURIST would be still longer if all its issues from the very first were included in the enumeration.

It has been a notable and an honorable past, and one to which we look back with lively satisfaction. After the struggles of the first few years the AMERICAN AGRICULTURIST speedily attained the commanding position in the periodical world which it has since occupied. The first agricultural paper of any prominence in the United States, it has always been the foremost, and, we honestly believe, the best. Started with a sincere purpose to aid and uplift the cause of American agriculture, it has steadfastly and conscientiously maintained that purpose through all these years. And what friends it has had!—friends who have stood by it, we can almost say, all their lives. These words will be read in thousands and tens of thousands of families where the AMERICAN AGRICULTURIST has been taken from childhood until now. In all these families it has been not merely a welcome visitor but a dear and trusted friend. Fathers and mothers were glad to put into the hands of their children a paper pure in every part, advertisements as well as reading matter; the mother appreciated as well the kindly counsel and helpful suggestion with which its Household department has always abounded; and the farmer was fully aware that in its agricultural, horticultural and floricultural features, the AMERICAN AGRICULTURIST had no equal. We say this in no spirit of boasting, but because we candidly believe it to be true.

To the wisdom and experience of age the AMERICAN AGRICULTURIST henceforth unites the vigor and enthusiasm of youth. Good as the paper has been, we are determined to make it a great deal better. It will not rest on its laurels, but press on to new and greater triumphs.

The AMERICAN AGRICULTURIST occupies today a unique position among periodicals. There are farm weeklies almost without number, and several cheap monthlies and semi-monthlies; but this is the only high-class monthly which ranks among agricultural papers as *Harper's*, *The Century*, and *Scribner's* rank in the literary world—at the head. No other agricultural publication pays its contributors so liberally; no other commands the services of the best writers, artists and engravers; no other takes such pains to present its pages to its readers in clear and beautiful typography. Our readers have observed, and many of them have warmly approved, the recent improvements in its columns—its increased size, at least forty-eight pages in each number; the greater variety of its contents; its pithy and pointed discussions of themes of timely interest to farmers; the large number of illustrated articles; and the increased space devoted to the family features and the always popular "Basket." If we were to repeat here all the kind words our friends have written concerning these and other improvements, we could fill pages with their congratulations. We have some especially choice and delightful reading in store for the November number, and our friends will find that future issues will not only maintain the reputation of the AMERICAN AGRICULTURIST at its best estate but richly enhance and increase it.

## Seth Green.

Seth Green, who was born in 1817 in Irondequoit, a suburb of Rochester, N. Y., died in the last-named place on the 20th of August. Nearly his whole life, after leaving the public school, was spent in the field or on the water. He was at an early age an expert fisherman and hunter, and later in

SETH GREEN.

life made a world-wide reputation as one of the most practical and accomplished fish culturists the country has produced. For many years Mr. Green owned a fish market in Rochester, where the choicest products of the net, the rod and the gun could be found. He was a thoughtful and observing man, not schooled in the science of books, but versed in that scientific knowledge that comes from a careful observation and verification of the facts revealed by nature. He knew nothing theoretically and accepted no man's dictum. A fact was not a fact with him until its truth was demonstrated.

In 1837, while he was watching salmon making a nest and spawning in the waters of a small stream near Coburg in Canada, he noticed that the male fish and other fish greedily devoured the eggs, while the females sedulously covered the few remaining ones with gravel for concealment. Here broke upon his mind the idea of the artificial propagation of fish, and to this great work the remainder of his life was devoted. For twenty-seven years he quietly experimented, and in 1864 he put the results of his study into practice upon a small stretch of the famous Caledonia Creek, in Livingston Co., N. Y. He was able to secure and protect ninety-five per cent of the eggs spawned and thus added immensely to the possibility of the fish product. He artificially hatched salmon, brook trout of various kinds, including German and California, salmon trout, carp, sturgeon, muscalonge, pike, perch, bass, etc., in fact all of the game fish of the fresh waters, and indeed all of the edible fish it was worth while to experiment with. He also successfully hybridized striped bass with shad, European trout with American, brook trout with California salmon, and shad with herring. These fish were sent all over the country and to foreign lands, and private and public waters were everywhere stocked. The devices of the "pot-hunters" have been stayed, and the wiles of those who break our reasonable game laws have been confounded. A new era has been reached. A few years ago it seemed as if the finny tribes in fresh water would cease to exist except in remote and sequestered regions. Now they abound in our waters, and Seth Green has taught the world, in the AMERICAN AGRICULTURIST and other journals, how to maintain a supply of food fishes in the streams and pools and ponds that water such multitudes of farms.

Mr. Green took the shad fishing of the rivers flowing into the ocean into special consideration, and proved himself a great public benefactor by reviving and restoring an industry that had languished. From the Savannah to the Penobscot he populated the shad streams with tens of millions of fish and brought pleasure to the millions of consumers who were contemplating the possible failure of this enjoyable food. In the Connecticut and the Hudson his efforts were especially triumphant, and he counted his young fry in these rivers by hundreds of millions. To California in 1871 he transported the first shad ever seen in those waters. In 1886 one million shad were taken on the Pacific Coast. Truly what Swift said of the man who made two ears of corn or two blades of grass grow where but one grew before may be said with greater force of the work of Mr. Green. In 1868 the New York State Fish Commission was organized with Mr. Green as one of the Board. He soon retired, and was made Superintendent of the Commission, a place he occupied until his death. He was in active correspondence with fish breeders all over the world, and was awarded many medals and testimonials by societies in the United States and Canada and by the Acclimation Society of Paris. For three years Mr. Green has contributed each month to the columns of the AMERICAN AGRICULTURIST, and our own readers, who have enjoyed his essays, will miss the genial instruction he has so liberally given them. The last article written by him appears in this number.

Personally, Mr. Green was a man of great originality. A man of medium size he wore a full and flowing gray beard, in which was set a wide mouth that closed with a grip, and above which shone out small, sharp and piercing eyes. His whole appearance proclaimed the possession of physical vigor and untiring energy. His death was the result of a decline of his vital force owing to his age, and was hastened by a fall from a sleigh

in January last. A severe attack of pneumonia six years ago was the first inroad upon a constitution that bore him bravely through an honored and eventful life.

## An Object Lesson.

The letter in this number from a Dakota correspondent shows in a striking way the heroic struggles of a large class of men in that and other new sections to make for themselves a home and establish themselves in business with hardly a dollar of capital to begin with. Nobody would think of starting, for instance, in the lumber business, or in a mercantile pursuit, without sufficient money to "swing" the business; but many a man engages in farming in the far West (and farming is just as much a business as any other) without a dollar to provide for emergencies. Indeed, it is expected that one crop, or two or three crops at the most, will pay for everything—the unpaid balance on the land, with full payment for implements and household expenses; and the extraordinary thing is that this is sometimes accomplished. Because it is not always accomplished, the farmer gets discouraged and blames "the country!"

Worst of all is the awful rate of interest which these farmers are obliged to pay. Our correspondent relates how he borrowed $400 but received only $325, a square seventy-five dollars going to the usurer and for "expenses." This is an intolerable burden for a poor man, and it is one which no rich man would ever consent to carry.

While our Dakota friend gets at the bottom facts, so far as his pocket-book is concerned, he shows considerable confusion of ideas as to the proper way to keep farm accounts. As we find that many other farmers need similar enlightenment, we shall soon publish an article upon this subject which will present this important matter so clearly that all can understand it. Correct book-keeping would not have made our Dakota correspondent one dollar richer, but it would have given him a truer comprehension of his real condition than he now seems to have.

## The Crops of the Year.

The season of 1888 has on the whole been a successful one for American farmers. There have been no long continued droughts over large areas of staple crops, although early frosts and heavy storms in August and September seriously injured the ripening crops in some sections. From the September reports by the United States Department of Agriculture, from numerous special reports and from its own extensive correspondence, the AMERICAN AGRICULTURIST arrives at the following conclusions:

COMPARISON OF THIS YEAR'S PROBABLE HARVEST WITH PAST CROPS.

| | 1888. | 1887. | Av. for 8 yrs. |
|---|---|---|---|
| Corn, bu.... | 1,720,926,833 | 1,456,161,000 | 1,616,718,567 |
| Wheat, bu... | 422,491,853 | 456,529,000 | 448,815,699 |
| Oats, bu.... | 709,155,201 | 659,618,000 | 544,838,549 |
| Barley, bu.. | 58,589,774 | 58,314,160 | *63,032,906 |
| Rye, bu..... | 25,680,000 | 21,756,000 | 28,640,000 |
| Buckwh't, bu | 11,632,923 | 11,161,244 | *11,000,000 |
| Cotton, bales | 6,213,919 | 6,506,150 | *6,438,000 |
| Potatoes Irish bushel... | 149,140,354 | 134,000,000 | 164,826,626 |

*Crop of '86.

The crop of hogs and mutton sheep will evidently be less than usual, and the advancing market appears well sustained. The quantity of beef cattle is also likely to be less than one year ago, owing to winter losses and low prices early in the year. A recurrence of the very depressed market in all meats, which characterized last winter, is hardly likely to be repeated during the ensuing six months. The wool clip is larger and prices are more satisfactory. A successful dairying season is closing, both cheese and butter having sold at fair prices in home and foreign markets, and there is an exceptionally promising outlook for winter dairying, as summer stocks are well sold up and an active demand for fresh winter butter will prevail at good prices.

A fine crop of cigar leaf tobacco is assured, but on a reduced acreage the total yield will be below the average of recent years, especially if frosted leaf is excluded. The same statement applies quite closely to the Southern heavy leaf, but the shortage will be nothing like that of last year. Onions and cabbage are a remarkably fine yield on an increased area, and prices will be lower than last year. Squashes, melons and all vine crops are below the average, including beans. Both Irish and sweet potatoes are good yields, and market garden crops have been excellent as a rule.

Foreign crop reports indicate that there will be an increased demand for American produce in foreign markets. Especially is this true of wheat, for not only is the yield of this great staple most extraordinarily short in England and France, but there is a general deficiency in the wheat crop of all Europe. The Russian wheat crop, which promised to be phenomenally large, has been seriously affected by fall storms, and the yields on the great wheat fields of India do not indicate that that country will have more than her usual surplus. With only a full average wheat crop in America, a dollar a bushel is a price that does not seem far in the distance.

## Honesty in the Fruit Trade.

The shipment of apples to England has of late years reached such proportions that the American orchardist wishes to know the fruit prospects abroad to aid him in estimating the probable demand from England. If England depended upon the United States alone to supply the deficiencies in her own crop, our shippers could estimate very closely as to the probable foreign demand; but Canada, and most North European countries, including Russia, being favored with much shorter transportation, can place their fruit in Covent Garden market before the American fruit can be put aboard a ship on this side. To offset the disadvantage of this greater distance the American shipper can always have finer fruit, shipped in better order. We say "can have;" we wish we could say *has*. In the early days of the shipment of apples, the fact that they were "American" was a guarantee of good quality. Within the last decade all that has been changed. The visitor to the sales of apples in London, at least, sees a barrel from each lot emptied into a large tray, the brand upon the barrel being, alas, no longer an assurance of the good quality of its contents, or of honest packing. Our orchardists raise as fine fruit as they ever did, and pick it with as much care, and it is to their interest to find out how the handsome, long-keeping "Campfield," used with us only for cider and feed for stock, arrives in London as "Baldwin" or as "Newton Pippin." To make the fraud all the worse, "Campfield" is a sweet apple. Sweet apples are not used, indeed hardly known in England. Such tricks as this have greatly injured the demand for and trade in American apples. It is certainly not the fault of our fruit growers that this state of things exists, but is to their own interest that it be rectified. When anything goes wrong with regard of fruit culture in England, a conference is called, and all interested come together and have an open and free discussion upon all matters relating to the subject. Two conferences are announced for this autumn: One at Chiswick, which will mainly concern itself with nomenclature; the other, at Crystal Palace, will discuss the commercial aspects of apple-growing, including drying, canning, etc. American orchardists do not need to institute similar "conferences." They have in the American Pomological Society all the machinery necessary. All fruit growers are invited to join this Society, which has a permanent character, and will welcome the presentation of anything that relates to fruit culture in every part of the country. The abuses in the shipping of fruit, which are a national disgrace, may well be considered by a committee of this national society.

## A New Profession.

One of the greatest difficulties encountered by the agricultural colleges and the experiment stations—more frequently by the latter—is the lack of competent men for carrying on the various lines of investigation, teaching or practice. These experiment stations have come to stay, and may be multiplied in the not distant future. So the demand for competent experts in the different departments of agricultural investigation will be permanent and constant for many years to come. To-day, no sooner has a man, young or old, demonstrated his particular fitness for any specialty in experimental agriculture than he is offered places at several stations.

It is not too much to say that a new profession, that of agricultural science, has now been established, and it is quite true that this profession offers greater immediate opportunities to the intelligent, observing, and brainy farmer boy than almost any other. The pay is good compared with the early remuneration in other professions or industries, and the chances for building up a reputation and making discoveries are quite as great, if not greater, than in almost any other branch of science. Nor is it difficult to secure the proper training for this profession. Education at the best of our agricultural colleges is comparatively cheap, and the chances of partly paying for it by labor are good. Upon completing this course, subordinate positions at the experiment stations are always open, in which a young man can further perfect himself, and at the same time more than pay his way. Then a course at Göttingen, or some other European university that gives elaborate attention to the sciences pertaining to agriculture, will equip a young man, so far as teaching by others can do so. The position and future that then await him depend upon his own abilities and his capacity to advance.

## The Insect World.

**The Chestnut Weevil.**—A. Lauderbach, Columbiana Co., O.: The small yellowish beetle with a long, slender, curved snout, is the *Balanninus nasicus* Say, or chestnut weevil. The fat, whitish grubs found in chestnuts when gathered in the fall, descend into the ground and in the following season come forth as beetles; at least a majority will change within a twelvemonth from the time they enter the ground, but some usually remain in the grub or pupa stage two years. There are several closely allied species of the nut-weevils, and it is supposed that each confines itself to a certain kind of nut, but this idea needs confirmation by a larger number of experiments than have as yet been made with these insects.

**The Red-humped Caterpillar.**—James Allen, Providence Co., R. I: The caterpillars found feeding on your apple trees are called the red-humped caterpillars because in addition to a red head they have a red hump or bunch on the fourth ring of the body. These caterpillars usually nest close together on the small twigs of the trees when they are not feeding on the leaves. When the caterpillars have reached maturity they descend to the ground and hide under the leaves and old grass, and then open their cocoons in which the chrysalid remain until the following season, when they are transformed to moths, of a light brown color, the fore wings being margined with dark brown. The scientific name of this insect is *Notodonta concinna*. The most simple means of destroying the caterpillars is to beat them from the trees with a slender pole or brush while they are young.

**The Elm Tree Beetle.**—Mrs. F. O. Boyd of Staten Island, New York, inquires: "Can you let me know how to preserve elm trees from a worm which has destroyed the leaf for three successive years? My trees have put forth a second foliage for two years, but each time it is destroyed as soon as the leaf comes out. The trees now look as if they were dead. Any information will be gratefully received." We presume that the "worms" to which you refer are the grubs or larvæ of the imported elm leaf-beetle (*Galeruca xantho melæna.*) This pest has become very abundant and destructive to the elm trees in our Eastern States of late years, and while it is readily destroyed by such poisons as London Purple and Paris Green, it is quite different to apply such insecticides to large trees. Where one can command abundance of water with power sufficient to throw it over the tops of the trees, both the beetles and the grubs can be destroyed. Small trees may be sprayed with an ordinary garden force pump, but to apply poisons to large ones is rather difficult and an expensive operation.

**The Emperor Moth—Diseased Apple Trees.**—H. O. Miller, New Haven Co., Ct.: The large greenish worm, about one inch and a half long, and clothed with yellow, branching prickles which sting severely, is the caterpillar of a handsome moth known as *Saturnia Io*, Emperor Moth. These caterpillars feed upon the leaves of various kinds of trees and shrubs, and occasionally are found feeding upon the leaves of corn and red clover, but it is not often that they are so abundant as to do any considerable injury to the plants attacked. When they are found on currant bushes or in the garden, the most simple way of destroying them is to brush them off and crush them with the foot. As for the dead leaves on the young twigs of green apple trees it would be rather difficult to determine the cause in the absence of specimens for examination. The trees may be attacked by a disease known as "twig-blight," supposed to be due to the presence of a fungus; but whether this fungus is the cause or merely the result of the disease and death of the twigs is still shrouded in mystery. There are also two species of minute beetles that attack and kill the twigs of apple, pear and some other kinds of fruit trees during the growing season, and it may be that one or both of these are at work in your orchard. In all cases the affected twigs should be removed as soon as the leaves wither, and then burned with whatever animal or vegetable parasites they may contain.

**Wool and Meal Moths.**—F. H. Macpherson, Ontario, Canada, asks for a remedy for "wool and meal moths," and inquires if they are the same species of insect. We are not sure what species of insects he refers to under the above names, but it is not likely that an insect will feed on both wool and meal. The common clothes moth, *Tinea flavigrontella*, attacks woolen garments only. The simplest remedy is to keep woolen garments not in use tied up in cotton bags. Ordinary close-woven muslin is thick and strong enough for the bags or larger cases in which to store the garments, and neither the clothes moth nor the larva of that more recently introduced but greater pest, the Buffalo beetle, will attempt to cut through cotton cloth. The carpet moth, *Tinea tapetrella*, also feeds on the woolen threads in carpets, but the frequent use of the broom and brush will usually prevent it from doing much damage. Powdered borax, camphor and similar insecticides scattered about the edges of the carpets may assist in keeping this pest in check. There are two species of grain moths, now quite abundant in this country, although neither is a native. The most common is the *Tinea granella*. It is a small moth of a creamy-white color, with spotted fore-wings. The best remedy is to clean out the granary in the spring; then whitewash and use tarred paper as a lining to the bins. The other grain moth is the Angoumois grain moth (*Gelechia cerealella*), so called from the province in France where it was first discovered destroying grain. It is now abundant in the South, and is very destructive to corn, often attacking it in the crib before it is shelled, as well as after storing in the granary. We do not know of any preventive except to kiln dry the grain, subjecting it to a temperature sufficiently high to destroy the eggs and grubs. If our correspondents will send specimens of the insects about which they inquire, they will assist us much in determining the species.

## Animal Ailments.

**Prevention Versus Specifics.**—Every owner and breeder of live stock who desires to treat the ailments of his animals intelligently should firmly fix in his mind this one idea—that there are no absolute specifics in medicine. Quacks and humbugs frequently take advantage of the farmer's ignorance of medicine, by claiming some secret nostrum that they have for sale, as a sure cure, a specific, for hog cholera, or indeed any other disease of either man or beast. There is no such thing as a sure cure. Quinine is often called a specific for ague, but every Western man knows how unfounded is the claim, and yet this medicine is recognized by intelligent physicians as coming as near a specific as we will ever get. From this fact it may be readily concluded that it will be both safe and prudent to let alone every secret medicine that is claimed to cure all cases of any given disease.

Fortunes are spent every year by farmers for nostrums and patent humbugs which their families and their animals would be much better without. There are thousands of horses and other farm animals "doctored" to death annually, many of which, if turned out and left to themselves, would get well. All owners of stock should make it an inflexible rule, when they have no one upon whose judgment they can rely, to allow no medicine to be given. Far better to trust to unaided Nature than to ignorant quackery. We see more of this in treating horses than other stock, but the same rule applies to all animals. Each stock raiser should study the ailments of his animals so that he can recognize the symptoms of disease. The intelligent physician does not bombard disease with a single heavy gun; he rather forces in the outposts of the enemy and cuts off their supplies until he gradually forces a capitulation.

This principle should govern and guide us in the diseases of animals as well as in human ailments. With our animals too we should remember that prevention is not only much better than cure, but also easier. There is scarcely a disease to which our domestic animals are subject that may not be prevented by the exercise of good judgment and prudence. Unfortunately we get careless; we neglect our duties towards our animals until for what the "ounce" of prevention would have more than sufficed, we find a "pound" of cure little enough to remedy. DR. A. G. CHASE, Kansas.

**Blistering Horses.**—In cases of blistering much needless suffering is almost universally caused. Before applying a blister, the edges all around the surface to be treated should be carefully coated over with raw suet for a space of one inch; this prevents the blister from running and saves much distress. The best blistering mediums are, in light cases, tincture of cantharides, and for severe use oil of cantharides; the best absorbing blister is tincture of iodine; creosote ointment is a gentle irritant. As soon as a blister has risen, cut with blunt-pointed scissors, the blades of which are very sharp, a lateral opening at the base of each separate sack. Let the water run off, and be careful not to wound the cuticle, which will readily again adhere and protect the new skin; oil the entire surface with olive or almond oil, using a soft feather, which should be burnt when once used; if a brush is used it must be of camel's hair and should be washed with soap in warm water after each and every time of use. During the entire time that a blister is rising and while it is running and afterwards healing, the horse must be carefully watched, lest he blemish himself. Still the power of motion must be allowed; only in cases when such motion retards recovery can restraint be judicious.

## Monthly Crop Report.

WASHINGTON, Sept. 10.—The September report of the Department of Agriculture makes the average condition of cotton 83.8, a decline of three and a half points since the last report. The general average is slightly higher than in 1887 and 1886. The decline, while slight, has been general throughout the belt, except in North Carolina and Tennessee, where more seasonable weather has resulted in slightly improved condition. The State averages of condition are: Virginia 84, North Carolina 84, South Carolina 83, Georgia 85, Florida 90, Alabama 87, Mississippi 86, Louisiana 79, Texas 78, Arkansas 87, Tennessee 95. The crop is generally somewhat late.

The report makes the average condition of corn 94.2, wheat 77.3, oats 87.2, rye 92.8, barley 86.9, buckwheat 93.7, potatoes 91.6, and tobacco 87. The returns show but very slight falling off from the exceptionally high August report of maize. The loss is almost entirely in one State, Kansas, where drought and hot, dry winds caused a decline. This high average has been exceeded but once in the past ten years, in 1885, when it stood at 95 and the largest crop ever grown was harvested. In the seven corn surplus States the average of condition is 95 against 64 at the same date in 1887. The averages of these States are: Ohio 99, Indiana 99, Illinois 98, Iowa 99, Missouri 92, Kansas 80, and Nebraska 97. In other States of large production it is: New York 92, Pennsylvania 98, Virginia 92, Texas 96, Tennessee 95, Kentucky 95.

The average condition of spring and winter wheat, when harvested, was 77.3 against 82 last year. The winter wheat States show a slight improvement over the last report of condition in July, but there has been a serious decline in the spring wheat region of the Northwest. The averages of the principal States are—Winter wheat: New York 86, Pennsylvania 92, Tennessee 96, Kentucky 90, Ohio 60, Michigan 78, Indiana 64, Illinois 72, Missouri 75, Kansas 90, California 85, Oregon 94. Spring wheat: Wisconsin 78, Minnesota 70, Iowa 73, Nebraska 80, Dakota 78.

The general average of oats at harvest time was four points lower than at the last report. The decline this year was mainly in the spring wheat region of the Northwest. State averages are: New York 93, Pennsylvania 96, Ohio 95, Illinois 92, Indiana 93, Minnesota 80, Iowa 73, Dakota 90. Barley has declined slightly, while buckwheat shows small improvement.

Potatoes have fallen off less than two points during the month, and their condition is generally high in all sections. Tobacco shows slight improvement, mainly in the cigar leaf States.

**Bees in Surplus Boxes.**—George Marsh, of Cook Co., Ill, wishes information how to make bees work in surplus boxes. For two seasons he has been unable to get them to enter either side or top boxes. To have bees work in surplus boxes, it is necessary that they be strong enough to occupy them. Then there must be a source of nectar on which they can work. This being the case there is seldom any trouble to get them to store honey in the boxes by using any standard hive. Occasionally bees prefer to swarm rather than to store honey. When this is the case take away their queen cells, and in other cases when they are obstinate in accepting the surplus boxes take a smoker and drive them into the boxes. Use starters of comb or foundation in all surplus boxes.

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## Farming in Foreign Lands.

Evidently our English friends require much dairy teaching, for one of them writes to a local paper to inquire why butter sticks to the hand when rolling.

At the royal agricultural show at Nottingham, in June, 4,717 implements were exhibited and 1,875 head of live stock. The attendance was 168,000. This was by far the largest show of stock ever seen in the old country.

Experiments in combating the swine plague by inoculation are being conducted on an extensive scale in England by Prof. Brown. The English government has found it useless to attempt stamping out the disease by compulsory slaughter.

Berkshires continue to be very popular among English swine growers. The herd belonging to the late A. Stewart, of Stainbridge, was recently sold at an average of $33.28 each for the eighty-five head; the highest price for a single animal was $126.00.

At a meeting of Oxfordshire Downs sheep breeders at Oxford, Eng., August 8, an association was organized and steps taken to start a flock book or register similar to the associations that have done so much for the promotion of other breeds of cattle and sheep.

The Perthshire (Scotland) road trustees have decided that in future no barbed wire fence shall be placed along any roadside where it would easily cause injury to persons or animals. This decision applies only to one district, but there is a sentiment in favor of having it generally adopted.

The principal English railroads have just equipped their lines with special cattle cars to be attached to passenger trains. This is done for the convenience of breeders of thorough-bred stock, in sending them to fairs. The rates charged, however, are much in excess of passenger fares.

The French wheat crop will be 115,500,000 bushels short this year, according to the last unofficial reports, though the latest official estimates place the shortage at about half this quantity. America and Russia will supply the deficit. The average wheat crop of France is about 300,000,000 bushels.

The Scandinavian dairy exhibit was held at Copenhagen in July with 400 exhibits of butter and 205 of cheese. Not only Denmark but Norway, Sweden and Finland were represented. All the different kinds of large and small farm dairies, butter factories and co-operative creameries were well represented.

The Austrian Minister of Commerce has refused to sanction a reduced freight rate granted by one of the railroads in that country for transporting Russian grain to Switzerland. He held that such favoritism to the Russians was detrimental to the interest of Austrian agriculture, which had as much right to the Switzerland market as any other country.

New South Wales imports a million pounds of hops annually, although the crop is considerably grown in Victoria, Tasmania, and New Zealand. It is believed that in New England, Monaro and other elevated regions of New South Wales, where the climate is comparatively cool and moist, plantations will be formed which will rival the famous hop gardens of Kent or New York State.

The English government has appropriated $25,000 in aid of dairy schools, but there is much discussion as to the best means of spending the money. The improvement of British agriculture is a great question with the government, which is now considering the establishment of a separate executive department of agriculture, similar to the departments of agriculture in other countries.

A fortune has been lost at farming by Charles E. Lyon, of Staffordshire, England, who has failed with liabilities of $81,710.40 and assets of $7,392. In 1882 he came in possession of half a million dollars' worth of property, of which he invested nearly $200,000 in a cattle ranch in Texas, where he lost 3,000 head of cattle and sunk all he invested, besides $100,000 invested in other cattle companies that have collapsed.

The implement manufacturers of Scotland have an organization called the Scottish Agricultural Engineers' Association, its objects being mutual assistance and helpful friendship. It has secured concessions in railway rates of great value and also in the rules governing exhibits of implements at fairs. The annual dinner of this association is made much of. There is at least one such organization in the United States.

Americans associate English farming with large holdings, but it seems that out of the 414,050 farms in England, there are 233,583 under twenty acres in extent. In the large and rich county of Lincoln there are 7219 holdings of five acres or less, 7954 from five to twenty acres and no less than 20,263 holdings of fifty acres or less, a number even exceeded by the West Riding of Yorkshire, where there are 24,990 at or under fifty acres.

The phylloxera is spreading in Switzerland in spite of the great efforts made by the government to stamp it out. In the canton of Geneva, $10,000 were spent in this work last year, and in Neuchatel vineyards have been destroyed for which the government has paid $110,000 in eleven years. The proposition to introduce American vines into Switzerland has not as yet met with much favor, although it has been very efficacious in France.

The Italian government pays an annual fee of $9 per head for horses registered for military purposes in case of emergency. This registering gives the government the right to take the horses without notice, at a price agreed upon at time of registry. In Great Britain a similar system of registering is in vogue, but the fee is only $2.50, although the owners of 47,000 horses registered are making an effort to have the fee increased to $10 yearly.

The Farmers' Supply Association of Scotland is the name applied to a co-operative system of buying feeding stuffs and fertilizers. It has added fifty to its membership during the past six months and now has six hundred members. It subjects all fertilizers to analysis, and the sellers of any found below the standard are obliged to give back the amount paid in excess of a fair actual value. The business done the first six months of this year reached nearly $80,000.

The bill to prevent the sale of foreign meat in England as the home-grown product has been withdrawn, with the understanding that at the next session of the House of Lords a select committee is to be appointed to inquire into the whole subject of selling foreign articles as British. The matter of selling horse flesh as ox meat, which is largely carried on in the Manchester district, is also to be investigated. Public sympathy is aroused against adulterated lard, which, it is averred, comes largely from America.

Relative to the Sussex breed of cattle, which were fully considered and described in the AGRICULTURIST for July, the London *Times* remarks: "The Americans have found out the great value for early maturity and high quality beef of the Sussex cattle, and are now paying high prices. It is very probable that 20 years ago they could have bought up every Sussex beast in this country for $50,000. So great has been the stimulus to the breed that now this sum has to be spent to obtain a mere handful, and without in any way affecting the stocks of the country."

A pasture at Rothamsted, England, has been fed to stock that were given cottonseed cake frequently, and their droppings have been spread over the land. The result is a wonderful improvement in quantity and quality of herbage over adjoining pastures not so treated, even where nitrate of soda had been liberally used. In one case heavy dressings of nitrogenous manures alone had actually exterminated all the finer grasses,—which is not strange when we remember that potash is the element most needed by the grass crop, and that when it is not supplied the finer grasses will die out.

A peculiar instance of the unjust railway rates in England is seen at the farms of the Aylesbury dairy company in Surrey. German litter is there used for bedding instead of English, because the freight on the latter is two-thirds more from Yorkshire than from Germany. On the same farms, American hay tedders, or "kickers" as they are called there, are used, as the cost of bringing the machines from New York was only half what would have been charged from Liverpool. Here is a market that American manufacturers of tedders will do well to work, for in the damp climate of England this excellent machine should be widely used.

Co-operative dairying is on the increase in Australian colonies. New butter factories are going up at Gerringong and Shell Harbor. The capital of the latter is $8,000. Some of the factories are also proprietary. It requires on the average about twenty-two pounds of milk to make one pound of butter, which is nearly the average in this country. The capital employed per factory in Australia is much more than in the United States, however, and the co-operative butter factories in our New England States operate very successfully on the cream-gathering system with a capital of $2,500 to $4,000. Some of the creameries, with only $3,000 capital, sell butter to the value of $60,000 to $70,000 annually.

The English wheat crop is estimated to be 23 1-2 bushels per acre, or 5 1-2 less than an average and 8 1-2 bushels less than last year. The total yield is placed at less than forty-five millions of bushels, seed wheat excluded, which is the shortest crop grown in Great Britain in the present century. She will require one hundred and sixty million bushels to supply her wants this year, most of which will come from America and India. Higher prices are confidently looked for, and it is believed that wheat will reach $1.20 per bushel of sixty pounds in London long before the next crop comes due. The quality of the English grain must be poor and the higher prices will come to those foreign wheats which produce a better grade of flour.

The competition for prizes offered by the Royal Agricultural Society for the best farms in the portion of England in which the show is held, always excites wide-spread interest. This was particularly true the present year. The prizes of $500 and $250 respectively for the best managed arable and grass farm of 300 acres and upwards, were won by two brothers in Nottinghamshire. The first prize farm produces principally beef and mutton, which are bought in Ireland and fattened for the butcher, about 1,000 sheep and 200 bullocks being turned on the farm of 600 acres. The second prize went to a farm of 850 acres, of which 200 were in grass, and the sales from which during the past year were $5,740 for horses, sheep $26,400, cattle $25,353, grain $3,196, milk $1,265; total $61,954. There was paid out for labor $4,708, extra keep $1,228, grain $5,910, horses $4,708, sheep $13,070, cattle $1,127; total $30,754, showing net sales of $31,200. There were more entries in the class of large farms than in the competition for smaller ones.

Much progress has been made in improving the stock of the Argentine Republic. There is some interest in horned cattle, and a good demand exists for thorough-bred Shorthorn and Hereford bulls, to cross on the gaunt and longhorned native stock. Several breeders have imported thorough-bred Merinos from Vermont, also horses from the same State, which have sold at very satisfactory prices. E. A. Sumner, of Pontiac, Mich., early this year sold nine thoroughbred Hereford bulls and sixteen cows at fancy prices in Buenos Ayres. Some of the horses imported from America (believed to be the refuse from New York auction houses) have been of poor quality and were beaten by native half-breeds at the races last fall. The result has been disastrous to the horse interest. The Argentines are very confiding, but when humbugged once can't be swindled a second time. All stock consigned to Buenos Ayres should be of the finest quality and honestly registered. For such there is a good market, the auction sales of imported breeding stock in Buenos Ayres having been over $600,000 in 1887.

The report of the departmental committee appointed some time ago to inquire into pleuro-pneumonia and tuberculosis in England, Scotland and Ireland, is an exhaustive document. The committee conclude that only where all diseased and exposed cattle are at once slaughtered has pleuro-pneumonia been satisfactorily eradicated, and they unreservedly recommend such compulsory slaughter. Greater penalties for concealing the disease, and a complete system of inspectors and public abattoirs are also advised. The committee are clearly in earnest as to the necessity of stamping out tuberculosis. They are positive that this disease, which is similar to consumption in the human family, may be transmitted to man from the lower animals and from man to the lower animals, while it also spreads from animal to animal, either by inhalation, swallowing infected milk or by direct introduction by means of a scratch or sore in the skin or mucous membrane. Poor food, bad ventilation and excessive milking, are the principal causes of tuberculosis in cows, and possibly it is hereditary. The committee believe its extirpation must be gradual, and that diseased animals exposed in fairs, markets and in transit should be killed, while strenuous laws should prevent the sale of diseased meat.

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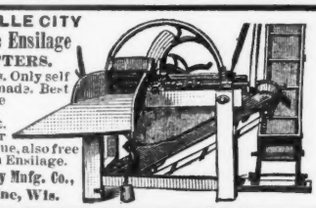

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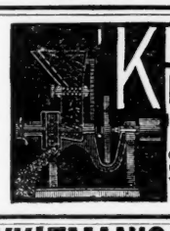

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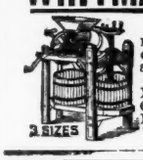


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## The Doctor's Talks.

In our last talk the dandelion was taken to illustrate the flowers of one division of the great Family *Compositæ*. As a representative of the other division we gave the flowers of the Ox-eye Daisy, the

Fig. 1.

illustrations of which we reproduce here to make the following Talk sufficiently clear: In examining Fig. 1, the first thing that will attract your attention is that there are two kinds of florets in each head. You will observe that the central portion, or disk, is crowded with many small, yellow florets; outside of these is a row of large white florets. These are termed ray-florets, and the whole together is called the ray. Thus we have the disk and the ray, respectively made up of disk florets and ray florets. If you cut a flower-head down through the center, with a sharp knife, you can see its parts better, especially if you have a magni-

Fig. 2.

fying glass of some kind. Examining the section of the head (Fig. 2), you will find the center or disk crowded with small yellow flowers. Outside of these are the ray flowers. These are all placed upon the "receptacle" which is the end of the flower-stalk flattened out to receive them. The whole is surrounded by the involucre, which consists of numerous scale-like leaves. Examine the separate florets, one from the disk (Fig. 3), and one from the ray (Fig. 4), being shown separate and enlarged. Both of these have, below, the ovary. This, you recollect, from some of our earlier talks, is the part which will ripen into the seed-vessel. Upon the ovary is the corolla, which, in the disk flowers, is a little tube with five little teeth, or lobes, at its open top. Such florets are called tubular, while the ray florets (Fig. 4) are strap-shaped like those of the dandelion. We may look upon these florets like a tubular floret which is split up lengthwise at one side and opened out flat. The teeth at the end, and the deep lines running the whole length, give strength to this idea. These strap-shaped florets are termed *ligulate*, from the Latin *ligula*, a strap. In the dandelion all the florets are ligulate, and one of the great divisions of *Compositæ* with heads of flowers like the dandelion is called the *Liguliflorœ*. The Ox-eye Daisy is taken to represent another sub-order or division, in which the florets in a head are either in part tubular, or entirely so, and is called *Tubuliflorœ*. There is still another division of the *Compositæ*, but as no plants belonging to it are natives of the United States, we pass that by.

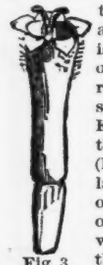

Fig. 3.

Fig. 4.

There are some characters belonging to all *Compositæ* which remain to be pointed out, and for these we will go back to the dandelion. In Fig. 5 we have a single floret of the dandelion, in which the ovary is shown at A above, and upon the top of this is B, the calyx, which consists of hairs, and is called a *pappus*. It is not always of hairs, but sometimes consists of a few scales or even a mere ring. Whatever its form, this calyx in the *Compositæ* is the *pappus;* when ripe and dry you

Fig. 5.

often see it floating about as the thistle-down. Just above the *pappus* is seen the corolla. Protruding from the corolla at C are the two *stigmas*, which you will recollect are the upper part of the *pistil*. As shown in a former Talk, the *pistil* usually consists of the ovary (here at A) and the style, an elongated portion (here hidden) which is divided at the top into two *stigmas* (C). It has already been shown that the stigma is that part of the pistil that receives the pollen, and that the style, here so long, may be quite wanting. Where are the stamens? you will perhaps wonder. It is one of the peculiarities of the composites to have their stamens united by their *anthers* to form a little tube through which the style (Fig. 6) passes, as seen in the engraving. While the anthers are united, the *filaments* are not, but are separate, and at their lower ends are fixed to the corolla. Being united by their edges, the anthers open to liberate the pollen, inward, the styles readily become sprinkled with it and the ovule being fertilized begins to ripen. In the dandelion, after fertilization has taken place, the heads close, and ripening goes on. The ovary enlarges, its upper position elongates and stretches up to form a slender neck, which bears at the top the hairs of the pappus as in Fig. 6. When all is ready the involucre opens once more and the ripe fruit is seen as a ball. Every youngster knows these balls of dandelion fruits when he blows it, to see if "mother wants ye." Others blow to "see what's o'clock," and older maidens blow to ascertain the state of their lover's affection. These "balls" consist of the separate fruits attached to a little cushion-like body, the rounded upper end of the flower stem, called the *receptacle*. This, as it appears in the dandelion, is shown in Fig. 7, where it is seen with four fruits still remaining upon it.

Fig. 6.

Fig. 7.

One of these balls or heads, with the fruit all remaining, is a most beautiful object. Each individual fruit (Fig. 6) is worth examining. You will recollect that the fruit formed by the ripening of the one-celled ovary of the buttercup, was called an *atsene*. The fruits in the dandelion, and all other *Compositæ*, are similarly *atsenes*. In the dandelion, the upper part of the *atsene* is beautifully roughened as if it were carved, especially where it narrows to form the neck, which bears at the top the circle of hairs of the *pappus*. The receptacle is an important portion in the *Compositæ*, as it bears all the florets, and assumes many characteristic forms and markings. *Compositæ* are very numerous, and you will find much pleasure in examining the various florets and noting how they agree with and differ from our ox-eye and dandelion.

THE DOCTOR.

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**Manure** of every kind made on the farm should never be kept to leach in the open barn-yard, or be piled in heaps behind the stables, rotting the sides and sills and receiving the drips of the eaves. Enough of the elements of fertility may be lost in a few years to double the productive capacity of a farm. The present is a good time to prepare a covered pit in a convenient place.

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**Horse-Shoes** should never be worn more than six weeks, at the most, without resetting. The hoof is growing all the time, like the finger and toe nails of a human being, and the shoes should be removed and refitted at frequent intervals.

## Society of American Florists.

The fourth annual convention of this flourishing association, which was held in New York city from August 21st to 24th, may be considered the most successful session within its history. The meetings were well attended and the list of members was swelled to over 1200. The papers read, as well as the minor discussions, embraced every imaginable subject of interest to the florists' business. To some of the topics of most general interest we shall refer more fully in future numbers of the AMERICAN AGRICULTURIST. During the entire session the most cordial feeling of harmony prevailed, and so far as could be judged by appearance all the visiting members were well pleased with their reception in the American metropolis, which does not generally enjoy a very favorable reputation for its hospitality to similar societies holding their meetings within its boundaries. The lack of public spirit in this regard was painfully evident in Nilsson Hall, where the exhibition was held. The New York florists did not even try to show what they can do, probably out of politeness to their guests; but that none of the wealthy New Yorkers contributed some of their many and valuable greenhouse treasures was surprising, and that, too, in a city which spends annually more money for flowers than any other in the world. But exhibitions and discussions are not the greatest good such gatherings produce; of infinitely greater benefit are the bringing together of those engaged in similar pursuits, and the friendship and fellow-feeling created thereby. The next annual meeting will be held in Buffalo, N. Y. The officers for the ensuing year are: President, J. N. May of Summit, N. J.; Vice-President, W. J. Palmer of Buffalo, N. Y.; Secretary, W. J. Stewart of Boston, Mass.; Treasurer, M. A. Hunt of Terre Haute, Ind.


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United States Senate, Washington, D. C., June 22, 1888.

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Executive Department, Columbus, Ohio, June 28, 1888.

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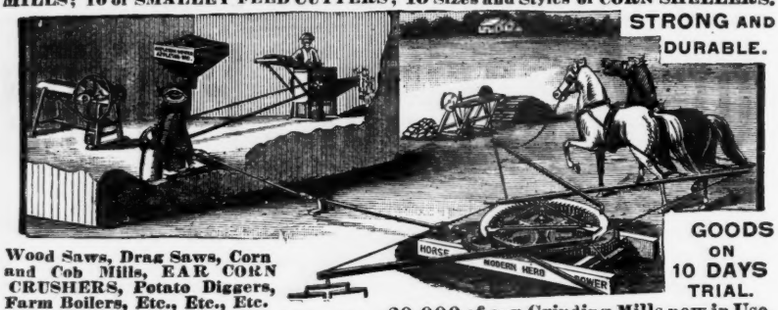


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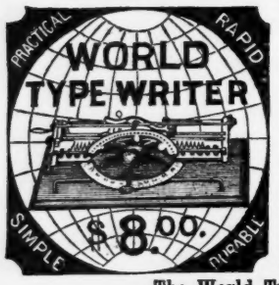


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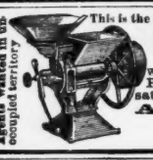

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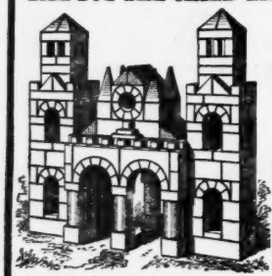

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### He Wanted His Horses Boarded.

A farmer from New Jersey, who was not up to the dark ways of New York sharpers, was recently victimized in a manner which left him no chance for legal redress. He was in a public hall, with several other farmers, when a rather engaging man entered, and stated in a general way that he was looking for a place in the country where he could have a span of horses boarded. He was willing to pay twenty dollars a month for each horse. Our New Jersey friend seized promptly upon the chance, and accompanied his prospective customer to a stable on Nineteenth street. There he was shown the team in question. A rather good looking black horse was also standing in one of the stalls, to which his attention was directed. At this point another well dressed stranger entered the stable and remarked to the ostensible proprietor, "I have made up my mind to take that black horse at your offer of three hundred dollars." "Did I offer it to you for that?" asked the other. "No; but you did to a friend of mine." "Well, I'm sorry, but I can't sell it to you at any price. The horse belongs to my wife, and she insists that it shall not be sold to a livery stable keeper." With a crestfallen look the would-be purchaser took the New Jersey farmer aside and told him, in a confidential tone, "See here; you buy that horse and bring it around to my stable and I'll give you twenty-five dollars for your bargain. I'll advance the money if you don't happen to have it with you." At this he handed the farmer a business card of a "livery and sale stable" which he said was his own, and slipped out. Our New Jersey friend at once opened negotiations for the black horse and was told that he could have it for three hundred dollars cash, to be paid that day. Paying ten dollars—all he had with him—as earnest, he started out to the address given on the business card. The place was not a livery stable, nor could he obtain any trace of his expected customer. Then it began to dawn upon his mind that he had been victimized, and he returned to the Nineteenth street stable. His original customer was still there, and the farmer demanded the return of the ten dollars he had paid. The answer was, "You bought that horse for three hundred dollars; you can pay the balance to-day as you agreed to, or I shall sue you for it and the keep of the horse until it is paid for and taken away." With the prospect which this opened before him, our Jersey friend was glad to compromise by leaving the ten dollars in the hands of the swindler, who with his confederate is now looking for the next victim.

### Mining Sharks.

A little out of the usual run was the scheme worked by the Las Nuevo Minas de Santa Maria Gold and Silver Mining Co. Their mines were situated in Sonora, Mexico, and were sold to a couple of men who undertook to form a company and buy the property. The price to be paid for the mines was $62,500, but the company was to have a capital of twenty-five millions, in shares of $25 each. There were seven trustees, each of whom held one share of stock. The remaining 99,993 shares, representing a par value of $24,999,825, were issued to the mine owner, ostensibly to pay for the property. But he transferred them back to the trustees, who proceeded to sell them, with the understanding that they would pay the owner the price named for his mines, when enough stock had been sold, and that the owner should receive $50,000 in cash whenever $400,000 should have been paid in for shares by the public. The stock was sold at from $1.10 to $5 a share, and in a short time the company became bankrupt. One of the investors brought suit in a Brooklyn court to recover the money paid for stock. Judge Cullen declared in his decision that a gross fraud had been perpetrated, and ordered the defendants to account for all profits on sales of stock above the amount paid for the mines, and to pay these profits with interest to the receiver. There have been so many jobs of the kind that have not come before the courts that it is refreshing to see their fraudulent nature legally exposed. As ordinarily placed on the market by New York sharpers, mining stocks are generally worthless. As an investment, they are worse than a lottery.

### Speculation in Florida Lands.

The outcome of the scheme worked a few years ago by the "St. Andrew's Bay Land and Railroad Company," of Cincinnati, throws considerable side light on some more recent projects for settling Florida lands. The scheme was a plausible one, as the situation possesses many attractions in itself. But with its fine beaches, good fishing and other advantages, St. Andrew's Bay is one of the most inaccessible places in Florida. It is reached on the water side only by small schooners, and on the land side by a toilsome journey through sixty miles of light sand. The Cincinnati company obtained some of the land in large tracts for about a dollar an acre, and secured others at nominal prices from private parties by florid representations of what they were about to do. They divided the land into lots twenty-two by eighty feet, or twenty-four to the acre. These they offered to give away upon payment of one dollar and twenty-five cents for map, plans, and fee for recording the deed. This netted about a dollar a lot, or twenty-four dollars per acre, for which the company had paid one dollar. Then they wrote to each of their dupes offering to sell for three dollars the lot adjacent to the one already purchased. They advertised excursion tickets from Cincinnati to St. Andrew's Bay at ten dollars for the round trip to all purchasers of their lands. It is needless to add that no railroad sanctioned these offers or honored the tickets. It is reliably stated that two hundred thousand lots were sold. Great loss and suffering ensued, for many Northern people, allured by the glittering representations, sold everything they possessed and went with the proceeds to St. Andrew's. Then, learning the true state of things, they crawled back as well as they could. Some, who were fortunate enough to possess sufficient means, remained, and a pleasant little town of twelve hundred inhabitants has grown up there. But for every one who settled in St. Andrew's a large number lost all they put in. Thus out of the loss and suffering of the many a few have gained. The lesson is: Do not invest in Florida land schemes with your eyes shut.

### It is Not a Humbug.

Upon further investigation we find that injustice was done to the manufacturers of "Peroxide of Silicates" by mentioning it in our Humbug column. It is manufactured and advertised as an insecticide. That it is valuable for that purpose is shown by hundreds of testimonials from those who have tested its worth. These testimonials, from practical farmers in all parts of the country, abundantly prove that it is no humbug and that it merits the large sale which, although but recently introduced, it has already secured.

## Best Soil and Fertilizers for Potted Plants.

What soil to use for potting plants is often a perplexing question to the amateur floriculturist. The discussions of this subject at the recent Florists' Convention in New York, and the opinions expressed by some of the most experienced florists present are therefore of special interest and value to amateur as well as professional plant growers.

Antoine Wintzer, of Dingee & Conard, was of the opinion that as a rule too rich soil was used. It was better to have the earth too poor than the reverse, as in the former case stimulants in the form of liquid manures could be used as needed.

J. M. Jordan, of St. Louis, said that instead of piling up a heap of sods to rot, he preferred to plow up sod ground in the spring and keep it cultivated through the summer and the early part of the following spring, when he drew it to the greenhouse. If the soil was thin it could be manured previous to plowing. By this practice the soil was thoroughly rotted and aired, and was generally pretty free of cut worms.

Mr. Taylor, a prominent flower-grower near New York, stated that about one-sixth part of rotted cow manure could be safely mixed with the potting soil. He prefered the mixed manure from the cattle stable to the dried droppings in the field which are much less valuable. Of mineral manures, dissolved sulphate of ammonia he considered the best.

Mr. Foster, of Boston, applied liquid manure made by putting a thumb-pot of guano in a gallon of water and then diluting it one-half. It was used on roses twice a week after watering with clear water. A thumb-pot holds about a heaping tablespoonful. Well-rotted hen manure that has been kept under shelter may be substituted for the guano.

F. R. Pierson, of Tarrytown, N. Y., used both nitrate of soda and sulphate of ammonia for liquid manure, but considered the latter the best.

From the above it will be seen that the amateur need neither go to the woods nor the wood pile for potting soil but can procure it in any rich cultivated field where sod was plowed under in the spring. If very clayey it will need sand or fine coal ashes mixed to the amount of one-fifth of the bulk.

## Just From the Press.

SWINE HUSBANDRY; a Practical Manual for the Breeding, Rearing and Management of Swine, and the Prevention of their Diseases. By F. D. Coburn. New, Revised and Enlarged Edition.

This new edition will be welcomed by all the progressive farmers who are interested in that important factor of our industries—the American hog. It embraces all the recent developments of the industry. The statistics are brought down to the present year, and many important additions have been made to the original text. Among these are a succinct statement of Prof. Henry's experiments in feeding for fat and lean, and Prof. E. M. Shelton's experiments in determining the effect of cold. The work in its present form is beyond question the ablest and most valuable manual on the subject that has ever been published. The illustrations are numerous and finely engraved, and the paper and printing excellent. Orange Judd Co., New York; $1.75.

TRUCK FARMING AT THE SOUTH; a Guide to the Raising of Vegetables for the Northern Markets. By Dr. A. Oemler. New and Revised Edition.

Any one who has stood upon the wharves of Norfolk or Savannah in spring and summer, and seen the amount of fruit and vegetables shipped every day to the Northern markets, can form some idea of the magnitude which truck farming has assumed in the South. It has become, in fact, a leading and very profitable industry in a large portion of the Southern Atlantic and Gulf States. Several daily lines of ocean steamers depend in a large degree upon this industry for freights, while in the West, Chicago is the distributing point for an immense traffic in the products of the Gulf State truck farms. This important industry is mainly the growth of a few recent years. Much loss and disappointment have been caused by the want of experience and exact scientific knowledge. It is to supply this want that the present work was written. Dr. Oemler is widely known as a scientific horticulturist and practical truck farmer. His book sets forth in concise style the entire subject of truck farming, preparation of the soil, fertilizers and insect enemies, and gives clear directions for the management of each of the staple vegetables commonly raised for the market. The matter is well printed and amply illustrated. Orange Judd Co., New York; $1.50.

**Fighting the Rabbit Pest.**—The farmers of Queensland are making strenuous efforts to induce the government to protect them against the rabbit plague of New South Wales and Southern Australia by building a rabbit-proof fence along the border for a distance of nearly 1600 miles. The country bordering New South Wales is to be declared infested and fenced off into blocks of 200 square miles each, with approved rabbit-proof fencing. The success of the Tintinallogy disease (which is something like measles and kills the rabbits in twenty-six hours) in exterminating rabbits is confirmed by the latest advices. It was introduced on an estate of 236,000 acres in Menindie in December, with such satisfactory results that during the six months ended July 1, last, only $200 was paid for rabbits killedby hunters, whereas in the corresponding period of 1887 nearly $10,000 was paid, and in the year ended December, 1887, nearly 300,000 rabbits had been killed, yet they were more numerous than at the beginning of the year.

## The French International Exposition.

The zeal which the French people are displaying in preparing for their International Exposition of 1889 is greatly to their credit. It seems that no department of national industry is to be overlooked. Hence we need not be surprised to learn that agriculture is to have an important position. The animal and vegetable products of the entire world will be invited to come and show themselves. In this special department, which will naturally be classed among those called "temporary," one of the most interesting features bids fair to be the exhibition of breeding animals, which will include cattle, swine, and the inhabitants of the poultry yard. Horses form a class by themselves. This special exhibition of animals will take place from the 5th to the 14th of May, 1889, the object being to bring together for precise and intelligent comparison the best types of breeding animals from all countries of the world. The prizes offered are very liberal. The animals born and reared out of France form a class by themselves. American exhibitors who desire to be represented at this world's competition must place in the hands of the French Minister of Agriculture a formal declaration of their intention to exhibit, according to the official form, before January 1st, 1889. It will, therefore, be desirable for all such to inform themselves, by application to French consuls or other diplomatic agents in this country, in regard to these forms, the classification, etc. And they will do well to set about it in good season, as the blank forms are in the French language and will need explanation unless, by a happy afterthought, the French administration furnish translated copies.


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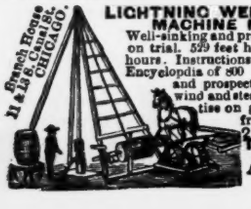


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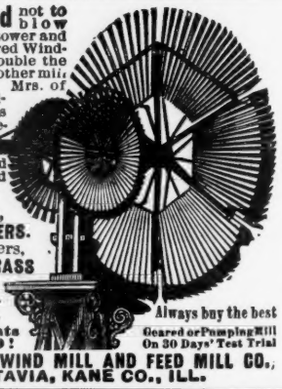

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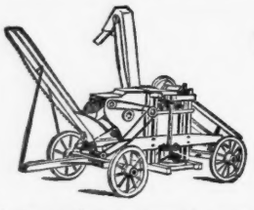

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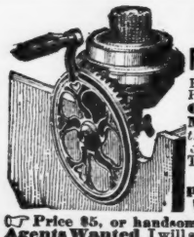

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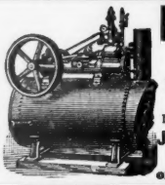

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**The Shooting Season.**—The present is the open season for about all kinds of game protected by law, and naturally every sportsman's fancy turns lightly to thoughts of guns. The John P. Lovell Arms Company, of Boston, offers a very large variety of arms and sporting goods of their own manufacture. Their catalogue, filled with valuable information, is sent on receipt of sixty cents in stamps.

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**American Incubators Abroad.**—Mr. George H. Stahl, Quincy, Ill., patentee and manufacturer of the Excelsior Incubator, has shown us two letters which he received from the island of Jamaica. The first stated that the writer had seen the advertisement of the incubator in the AMERICAN AGRICULTURIST and requested information as to price, etc. The second, of later date, contained a remittance and order for one of the incubators. The letters afford gratifying evidence that the AMERICAN AGRICULTURIST is doing its advertisers good in other countries; also that there is an extensive demand for the Excelsior Incubators.

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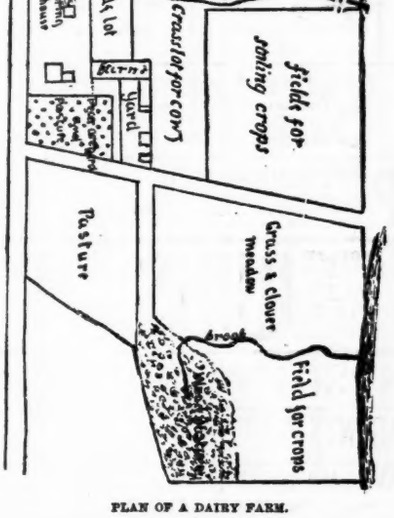


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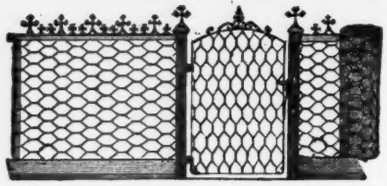

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